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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

ERM 20W Series

20 Watts
DC/DC Converter

Total Power: 20 Watts
Input Voltage: 9 to 36Vdc
18 to 75Vdc
40 to 160Vdc
# of Outputs: Single, Dual

Special Features

- Industrial Standard 2"×1" Package
- Ultra-wide 4:1 Input Voltage Range
- Fully Regulated Output Voltage
- I/O Isolation 3000Vac with Reinforced Insulation
- Operating Ambient Temp. Range -40 ^{O}C to +88^{O}C (With derating)
- No Minimum Load Requirement
- Overload and Short Circuit Protection
- Remote On/Off, Output Voltage Trim
- Designed-in Conducted EMI meets EN55032/22 Class A & FCC Level A
- Vibration and Shock meets EN61373
- Fire Protection Test meet EN45545-2
- Railway EMC Standard meets EN50121-3-2

Safety

UL/cUL/IEC/EN62368-1 (60950-1)
EN50155(IEC60571)
CE Mark

Product Descriptions

The ERM 20W series is a new range of high performance 20W isolated dc-dc converter within encapsulated 2"x1" package which specifically design for railway applications. There are 18 models available for railway input voltage of 24(9~36)Vdc or 48(18~75)Vdc or 110(40~160)Vdc and tight output voltage regulation. Further features include over current, over voltage, short circuit protection, remote ON/OFF, output trim and EMI filter meets EN55032/22 & FCC Part15 Class A as well.

The ERM 20W series conform to vibration and thermal shock test meets EN61373, cooling, dry and damp heat test meets IEC/EN 60068-2-1,2,30 and railway EMC standard EN50121-3-2 and complies also with Railway Certification EN50155 (IEC60571).

The ERM 20W series offer a highly reliable solution for critical applications in railway systems, battery-powered equipment, measure instrumentation and many critical applications.

ARTESYN™
EMBEDDED TECHNOLOGIES

Model Numbers

Model[1]	Input Voltage	Output Voltage	Minimum Load	Maximum Load	Efficiency
ERM04A18	9-36Vdc	5Vdc	0A	4A	87%
ERM01B18	9-36Vdc	12Vdc	0A	1.67A	87%
ERM01C18	9-36Vdc	15Vdc	0A	1.33A	87%
ERM01H18	9-36Vdc	24Vdc	0A	0.833A	87%
ERM01BB18	9-36Vdc	±12Vdc	0A	±0.833A	86%
ERM01CC18	9-36Vdc	±15Vdc	0A	±0.667A	86%
ERM04A18B	9-36Vdc	5Vdc	0A	4A	87%
ERM01B18B	9-36Vdc	12Vdc	0A	1.67A	87%
ERM01C18B	9-36Vdc	15Vdc	0A	1.33A	87%
ERM01H18B	9-36Vdc	24Vdc	0A	0.833A	87%
ERM01BB18B	9-36Vdc	±12Vdc	0A	±0.833A	86%
ERM01CC18B	9-36Vdc	±15Vdc	0A	±0.667A	86%
ERM04A36	18-75Vdc	5Vdc	0A	4A	87%
ERM01B36	18-75Vdc	12Vdc	0A	1.67A	88%
ERM01C36	18-75Vdc	15Vdc	0A	1.33A	88%
ERM01H36	18-75Vdc	24Vdc	0A	0.833A	88%
ERM01BB36	18-75Vdc	±12Vdc	0A	±0.833A	87%
ERM01CC36	18-75Vdc	±15Vdc	0A	±0.667A	87%
ERM04A36B	18-75Vdc	5Vdc	0A	4A	87%
ERM01B36B	18-75Vdc	12Vdc	0A	1.67A	88%
ERM01C36B	18-75Vdc	15Vdc	0A	1.33A	88%
ERM01H36B	18-75Vdc	24Vdc	0A	0.833A	88%
ERM01BB36B	18-75Vdc	±12Vdc	0A	±0.833A	87%
ERM01CC36B	18-75Vdc	±15Vdc	0A	±0.667A	87%

Model Numbers

Model[1]	Input Voltage	Output Voltage	Minimum Load	Maximum Load	Efficiency
ERM04A110	40-160Vdc	5Vdc	0A	4A	84%
ERM01B110	40-160Vdc	12Vdc	0A	1.67A	86%
ERM01C110	40-160Vdc	15Vdc	0A	1.33A	86%
ERM01H110	40-160Vdc	24Vdc	0A	0.833A	86%
ERM01BB110	40-160Vdc	±12Vdc	0A	±0.833A	86%
ERM01CC110	40-160Vdc	±15Vdc	0A	±0.667A	86%
ERM04A110B	40-160Vdc	5Vdc	0A	4A	84%
ERM01B110B	40-160Vdc	12Vdc	0A	1.67A	86%
ERM01C110B	40-160Vdc	15Vdc	0A	1.33A	86%
ERM01H110B	40-160Vdc	24Vdc	0A	0.833A	86%
ERM01BB110B	40-160Vdc	±12Vdc	0A	±0.833A	86%
ERM01CC110B	40-160Vdc	±15Vdc	0A	±0.667A	86%

Note1 - Suffix “B” means baseplate, see mechanical drawing.

Options

None

Electrical Specifications

Absolute Maximum Ratings

Stress in excess of those listed in the "Absolute Maximum Ratings" may cause permanent damage to the power supply. These are stress ratings only and functional operation of the unit is not implied at these or any other conditions above those given in the operational sections of this TRN. Exposure to any absolute maximum rated condition for extended periods may adversely affect the power supply's reliability.

Table 1. Absolute Maximum Ratings:

Parameter	Model	Symbol	Min	Typ	Max	Unit
Input Surge Voltage 0.1 Sec.max	24V Input Models 48V Input Models 110V Input Models	$V_{IN,DC}$	-0.7 -0.7 -0.7	- - -	50 100 170	Vdc Vdc Vdc
Maximum Output Power	All models	$P_{O,max}$	-	-	20	W
Isolation Voltage Input to output (60 seconds) Input / Output to Case (60 seconds)	 All models All models		 3000 1500	 - -	 - -	 Vac Vac
Isolation Resistance 500Vdc	All models		1000	-	-	Mohm
Isolation Capacitance 100KHz, 1V	All models		-	1500	-	pF
Operating Case Temperature	All models	T_{CASE}	-	-	+105	^{O}C
Storage Temperature	All models	T_{STG}	-50		+125	^{O}C
Humidity (non-condensing) Operating Non-operating	 All models All models		 - -	 - -	 95 95	 % %
MTBF (MIL-HDBK-217F@25^{O}C, Full load, Ground Benign)	All models		655,100	-	-	Hours

Note 1 - With Derating and under Natural Convection

Input Specifications

Table 2. Input Specifications:

Parameter		Condition	Symbol	Min	Typ	Max	Unit
Operating Input Voltage, DC	24V Input Models 48V Input Models 110V Input Models	All	$V_{IN,DC}$	9 18 40	24 48 110	36 75 160	Vdc Vdc Vdc
Start-Up Threshold Voltage	24V Input Models 48V Input Models 110V Input Models	All	$V_{IN,ON}$	- - -	- - -	9 18 40	Vdc Vdc Vdc
Under Voltage Shutdown	24V Input Models 48V Input Models 110V Input Models	All	$V_{IN,OFF}$	- - -	7.5 16 37	- - -	Vdc Vdc Vdc
Input Current	ERM04A18 ERM01B18 ERM01C18 ERM01H18 ERM01BB18 ERM01CC18 ERM04A36 ERM01B36 ERM01C36 ERM01H36 ERM01BB36 ERM01CC36 ERM04A110 ERM01B110 ERM01C110 ERM01H110 ERM01BB110 ERM01CC110	$V_{IN,DC}=V_{IN,nom}$	$I_{IN,full\ load}$	- - - - - - - - - - - - - - - - - -	958 960 955 957 969 969 479 474 472 473 479 479 216 212 211 211 211 212	- - - - - - - - - - - - - - - - - -	mA mA mA mA mA mA mA mA mA mA mA mA mA mA mA mA mA mA
Efficiency @Max. Load	ERM04A18 ERM01B18 ERM01C18 ERM01H18 ERM01BB18 ERM01CC18 ERM04A36 ERM01B36 ERM01C36 ERM01H36 ERM01BB36 ERM01CC36 ERM04A110 ERM01B110 ERM01C110 ERM01H110 ERM01BB110 ERM01CC110	$V_{IN,DC}=V_{IN,nom}$ $I_O=I_{O,max}$ $T_A=25\ ^oC$	η	- - - - - - - - - - - - - - - - - -	87 87 87 87 86 86 87 88 88 88 87 87 84 86 86 86 86 86	- - - - - - - - - - - - - - - - - -	% % % % % % % % % % % % % % % % % %

Input Specifications

Table 2. Input Specifications con't:

Parameter		Condition	Symbol	Min	Typ	Max	Unit
No Load Input Current (V_O On, I_O = 0A)	24V Input Models 48V Input Models 110V Input Models	$V_{IN,DC}=V_{IN,nom}$	I_{IN,no_load}	- - -	25 15 10	- - -	mA mA mA
Start Up Time		All		-	50	-	mSec
Input Filter		All	Internal Pi Type				

Output Specifications

Table 3. Output Specifications:

Parameter		Condition	Symbol	Min	Typ	Max	Unit
Output Voltage Set -Point		$V_{IN,DC}=V_{IN,nom}$ $I_O=I_{O,max,}$ $T_A=25\ ^oC$	$\pm V_O$	-	-	± 1	%
Line Regulation		$V_{IN,DC}=V_{IN,min}$ to $V_{IN,max}$	$\pm \%V_O$	-	-	0.2	%
Load Regulation							
	Single Output	$I_O=I_{O,min}$ to $I_{O,max}$	$\pm \%V_O$	-	-	0.5	%
	Dual Output		$\pm \%V_O$	-	-	1.0	%
Output Current	ERM04A18	Convection Cooling	I_O	-	-	4	A
	ERM01B18			-	-	1.67	A
	ERM01C18			-	-	1.33	A
	ERM01H18			-	-	0.833	A
	ERM01BB18			-	-	± 0.833	A
	ERM01CC18			-	-	± 0.667	A
	ERM04A36			-	-	4	A
	ERM01B36			-	-	1.67	A
	ERM01C36			-	-	1.33	A
	ERM01H36			-	-	0.833	A
	ERM01BB36			-	-	± 0.833	A
	ERM01CC36			-	-	± 0.667	A
	ERM04A110			-	-	4	A
	ERM01B110			-	-	1.67	A
	ERM01C110			-	-	1.33	A
	ERM01H110			-	-	0.833	A
	ERM01BB110			-	-	± 0.833	A
	ERM01CC110			-	-	± 0.667	A
Load Capacitance	ERM04A18	All	C_O	-	-	6800	uF
	ERM01B18			-	-	1200	uF
	ERM01C18			-	-	750	uF
	ERM01H18			-	-	300	uF
	ERM01BB18			-	-	600[1]	uF
	ERM01CC18			-	-	380[1]	uF
	ERM04A36			-	-	6800	uF
	ERM01B36			-	-	1200	uF
	ERM01C36			-	-	750	uF
	ERM01H36			-	-	300	uF
	ERM01BB36			-	-	600[1]	uF
	ERM01CC36			-	-	380[1]	uF
	ERM04A110			-	-	6800	uF
	ERM01B110			-	-	1200	uF
	ERM01C110			-	-	750	uF
	ERM01H110			-	-	300	uF
	ERM01BB110			-	-	600[1]	uF
	ERM01CC110			-	-	380[1]	uF

Note 1 - For each output.

Output Specifications

Table 3. Output Specifications con't:

Parameter		Condition	Symbol	Min	Typ	Max	Unit
Trim Up/Down Range			$\%V_O$	-	-	±10	%
Switching Frequency		All	f_{SW}	-	320	-	KHz
Temperature Coefficient		All	±%/°C	-	-	0.02	%/°C
Output Over Current Protection[1]		All	$\%I_{O,max}$	-	150	-	%
Output Short Circuit Protection		All	Hiccup Mode 0.7Hz type, Automatic Recovery				
Output Ripple, pk-pk	5V Output Models 12V Output Models 15V Output Models ±12V Output Models ±15V Output Models	0 to 20MHz bandwidth Measure with a 10uF/25V MLCC	V_O	- - - - -	50 100 100 100 100	- - - - -	mV mV mV mV mV
	24V Output Models	0 to 20MHz bandwidth Measure with a 4.7uF/50V MLCC	V_O	-	150	-	mV
V_O Dynamic Response	Peak Deviation Recovery Time[2]	25% load change	$\pm\%V_O$ $\pm\%V_{SB}$	- -	3 -	5 300	% uSec
Output Over Voltage	ERM04A18 ERM01B18 ERM01C18 ERM01H18 ERM01BB18 ERM01CC18 ERM04A36 ERM01B36 ERM01C36 ERM01H36 ERM01BB36 ERM01CC36 ERM04A110 ERM01B110 ERM01C110 ERM01H110 ERM01BB110 ERM01CC110	All	V_O	- - - - - - - - - - - - - - - - - -	6.2 15 18 30 ±15 ±18 6.2 15 18 30 ±15 ±18 6.2 15 18 30 ±15 ±18	- - - - - - - - - - - - - - - - - -	Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc Vdc

Note 1 - Hiccup mode.
Note 2 - Transient recovery time is measured to within 1% error band for a step change in output load of 75% to 100%.

ERM04A18 Performance Curves

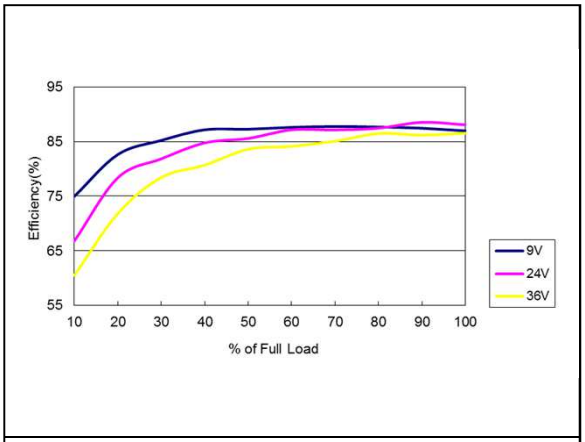

Figure 1: ERM04A18 Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to 4A

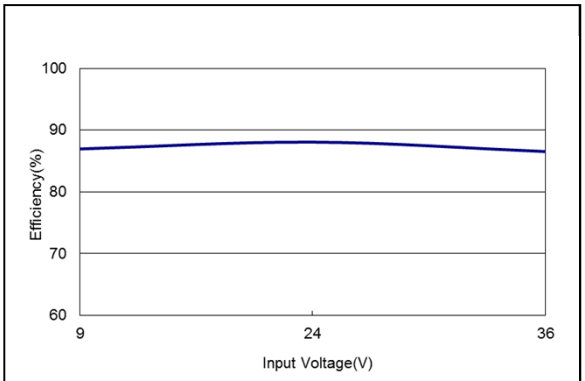

Figure 2: ERM04A18 Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = 4A

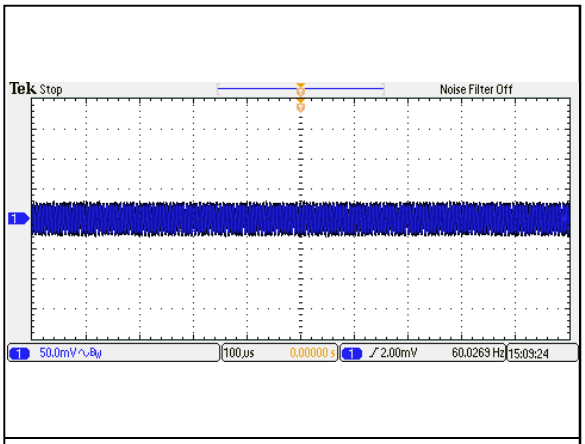

Figure 3 ERM04A18 Ripple and Noise Measurement
Vin = 24Vdc Load: Io = 4A
Ch 1: Vo

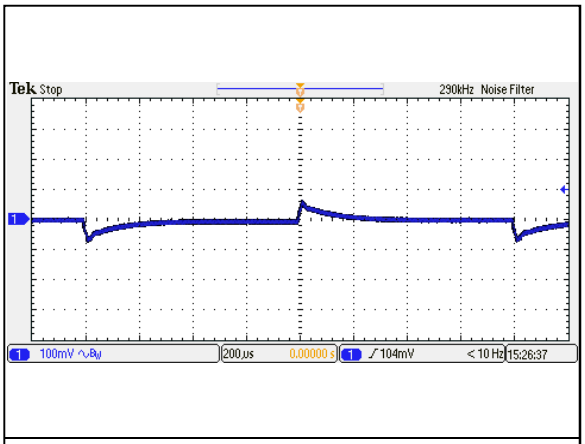

Figure 4: ERM04A18 Transient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

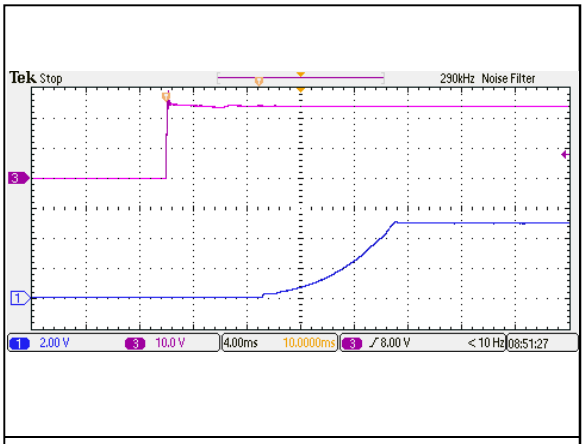

Figure 5: ERM04A18 Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = 4A
Ch1: Vin Ch3: Vo

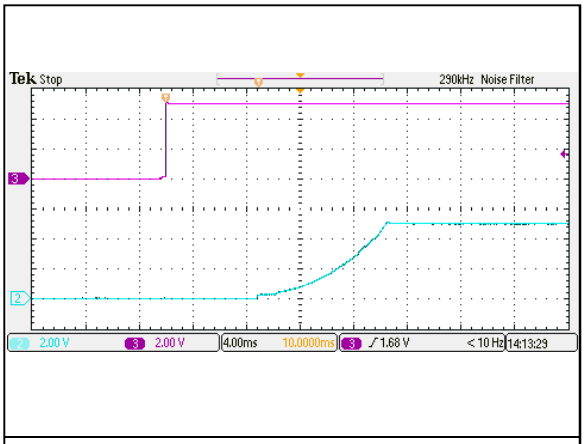

Figure 6: ERM04A18 Output Voltage Startup Characteristic by On/Off
Vin = 24Vdc Load: Io = 4A
Ch2: Vo Ch3: Vin

ERM04A18 Performance Curves

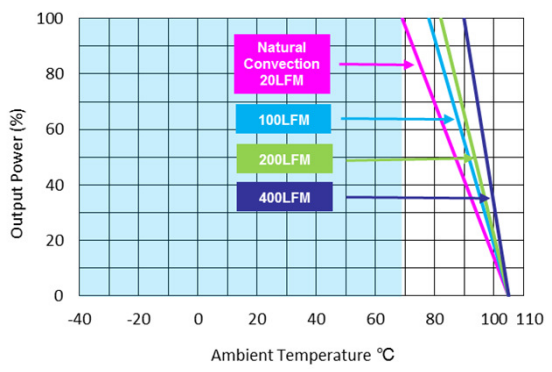

Figure 7: ERM04A18 Derating Output Current vs Ambient Temperature
Vin = 24Vdc Without Heatsink

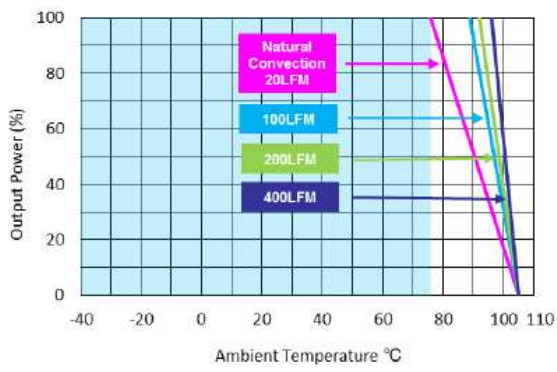

Figure 8: ERM04A18 Derating Output Current vs Ambient Temperature
Vin = 24Vdc With Heatsink

ERM01B18 Performance Curves

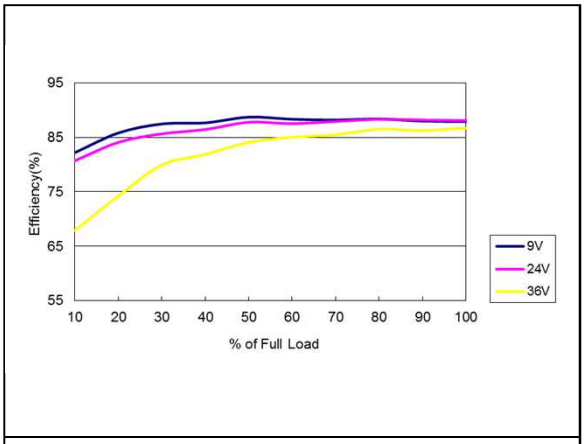

Figure 9: ERM01B18 Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to 1.67A

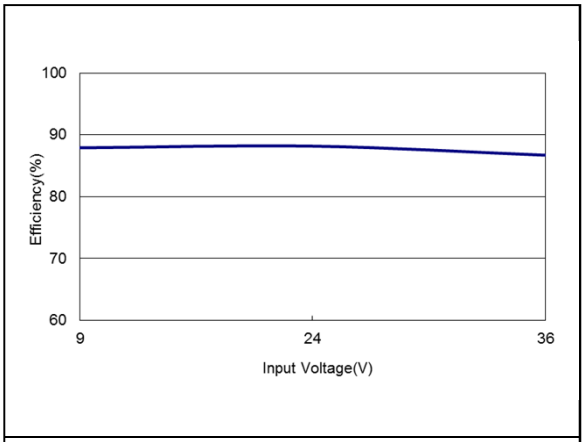

Figure 10: ERM01B18 Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = 1.67A

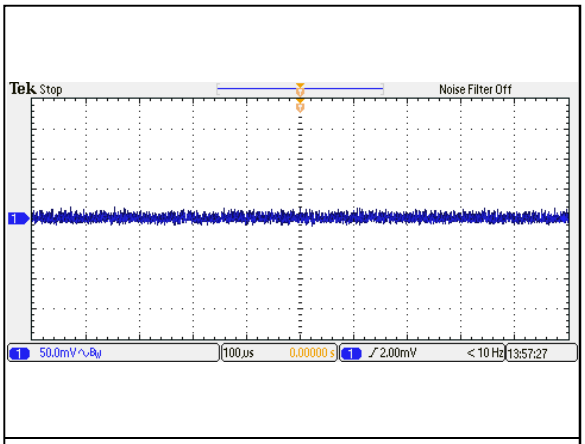

Figure 11: ERM01B18 Ripple and Noise Measurement
Vin = 24Vdc Load: Io = 1.67A
Ch 1: Vo

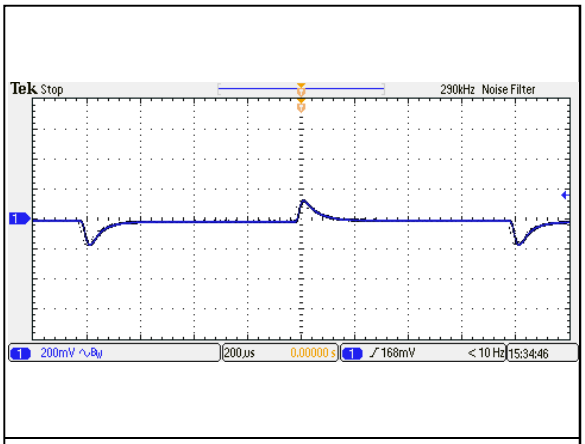

Figure 12: ERM01B18 Transient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

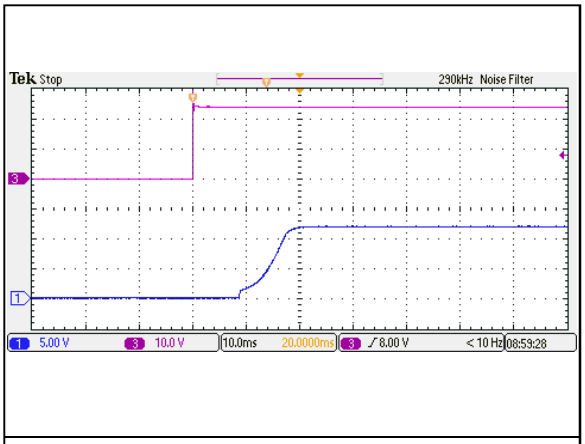

Figure 13: ERM01B18 Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = 1.67A
Ch1: Vin Ch3: Vo

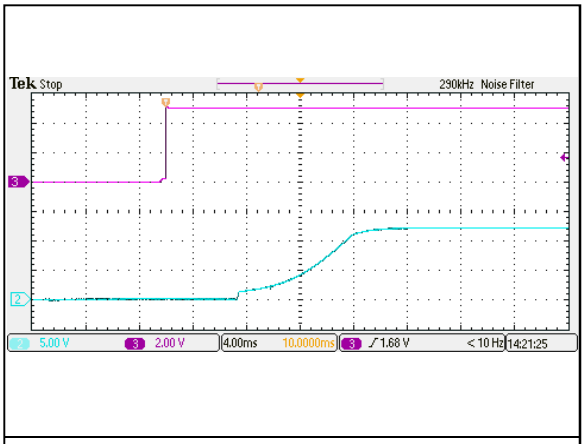

Figure 14: ERM01B18 Output Voltage Startup Characteristic by On/Off
Vin = 24Vdc Load: Io = 1.67A
Ch2: Vo Ch3: Vin

ERM01B18 Performance Curves

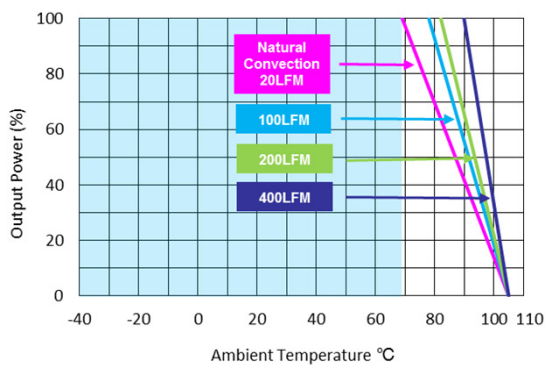

Figure 15: ERM01B18 Derating Output Current vs Ambient Temperature Vin = 24Vdc Without Heatsink

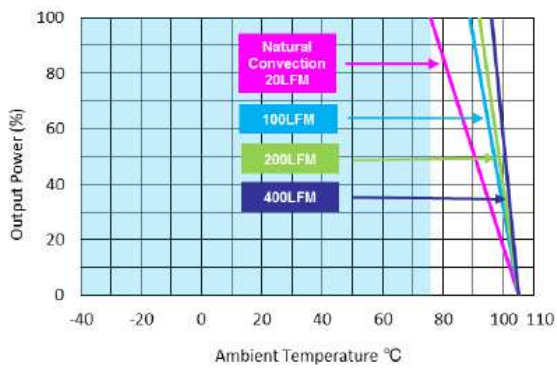

Figure 16: ERM01B18 Derating Output Current vs Ambient Temperature Vin = 24Vdc With Heatsink

ERM01C18 Performance Curves

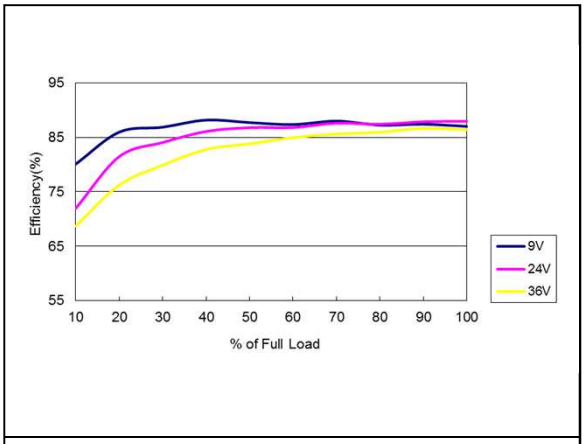

Figure 17: ERM01C18 Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to 1.33A

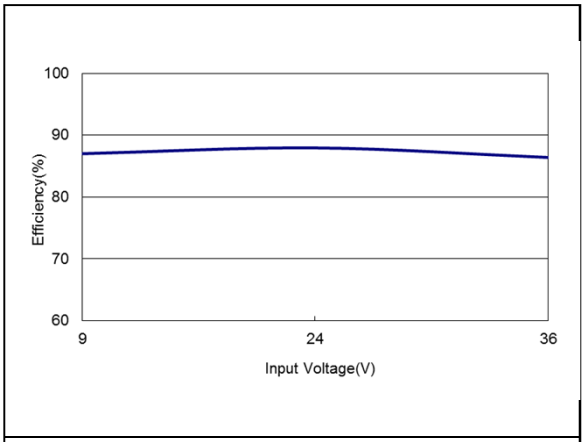

Figure 18: ERM01C18 Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = 1.33A

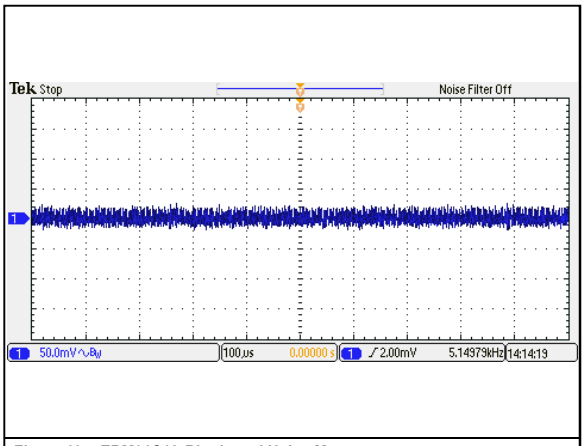

Figure 19: ERM01C18 Ripple and Noise Measurement
Vin = 24Vdc Load: Io = 1.33A
Ch 1: Vo

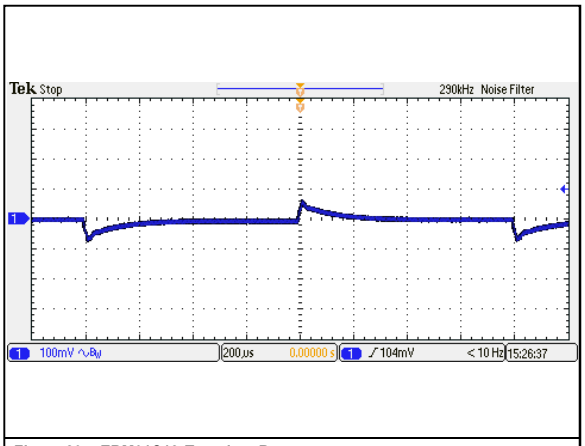

Figure 20: ERM01C18 Transient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

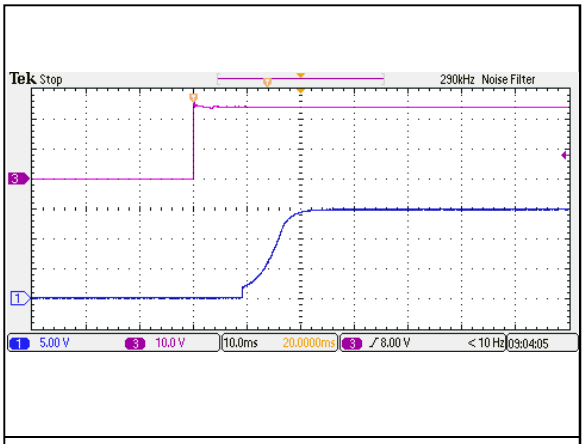

Figure 21: ERM01C18 Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = 1.33A
Ch1: Vin Ch3: Vo

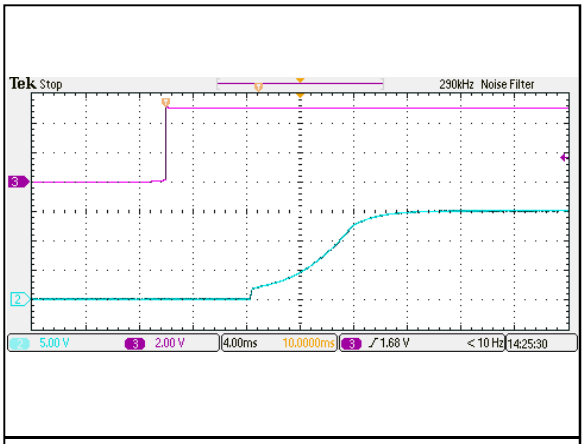

Figure 22: ERM01C18 Output Voltage Startup Characteristic by On/Off
Vin = 24Vdc Load: Io = 1.33A
Ch2: Vo Ch3: Vin

ERM01C18 Performance Curves

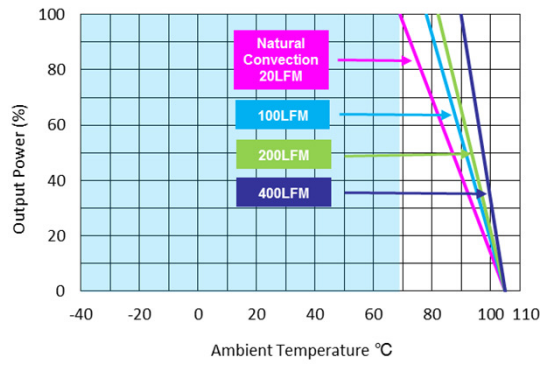

Figure 23: ERM01C18 Derating Output Current vs Ambient Temperature Vin = 24Vdc Without Heatsink

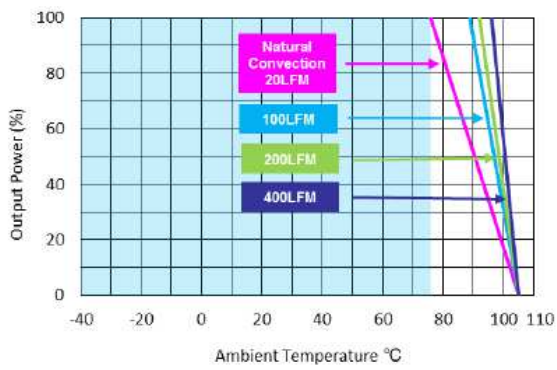

Figure 24: ERM01C18 Derating Output Current vs Ambient Temperature Vin = 24Vdc With Heatsink

ERM01H18 Performance Curves

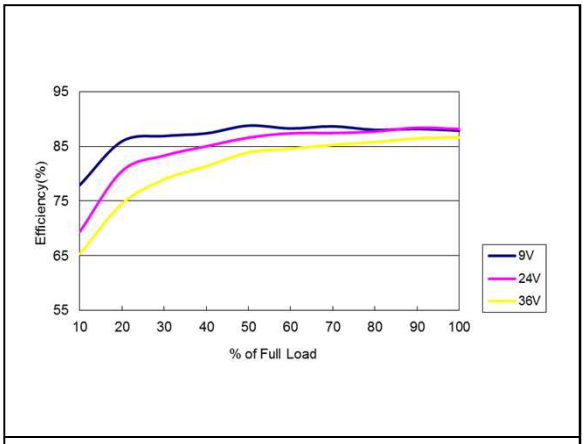

Figure 25: ERM01H18 Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to 0.833A

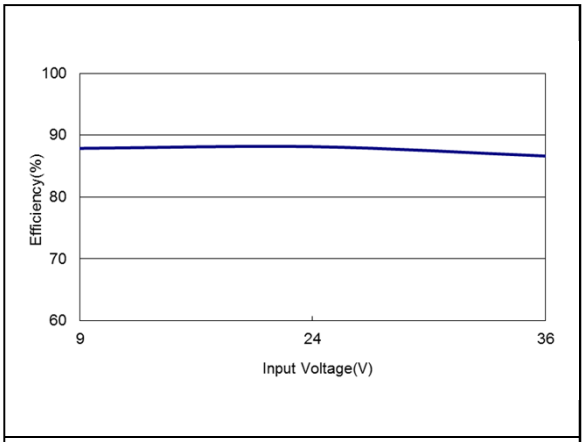

Figure 26: ERM01H18 Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = 0.833A

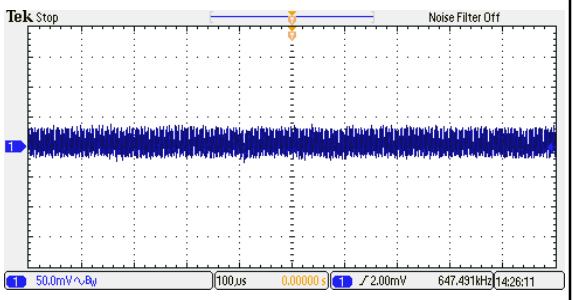

Figure 27: ERM01H18 Ripple and Noise Measurement
Vin = 24Vdc Load: Io = 0.833A
Ch 1: Vo

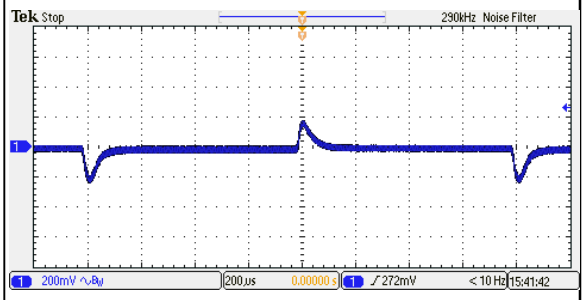

Figure 28: ERM01H18 Transient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

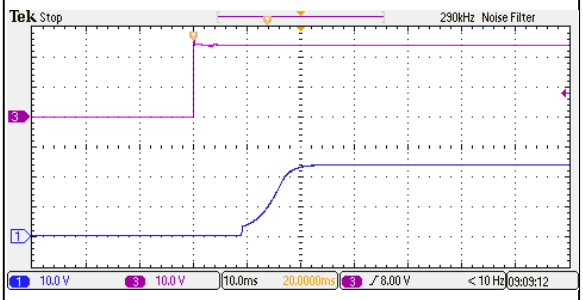

Figure 29: ERM01H18 Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = 0.833A
Ch1: Vin Ch3: Vo

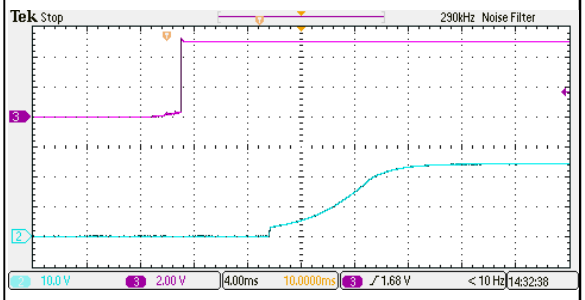

Figure 30: ERM01H18 Output Voltage Startup Characteristic by On/Off
Vin = 24Vdc Load: Io = 0.833A
Ch2: Vo Ch3: Vin

ERM01H18 Performance Curves

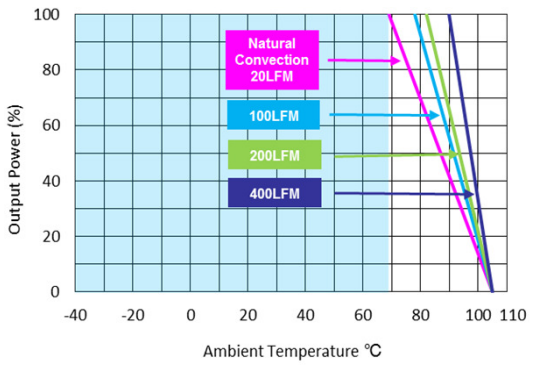

Figure 31: ERM01H18 Derating Output Current vs Ambient Temperature
Vin = 24Vdc Without Heatsink

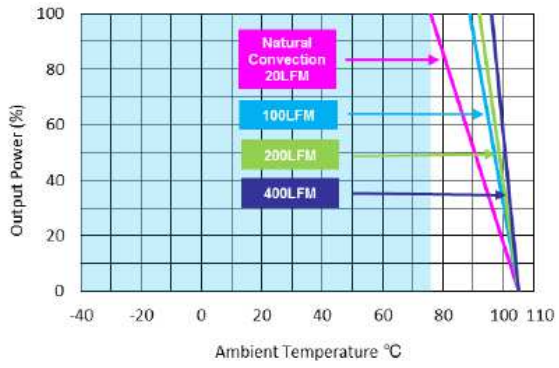

Figure 32: ERM01H18 Derating Output Current vs Ambient Temperature
Vin = 24Vdc With Heatsink

ERM01BB18 Performance Curves

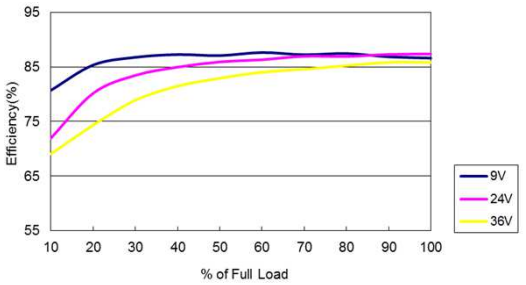

Figure 33: ERM01BB18 Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to ±0.833A

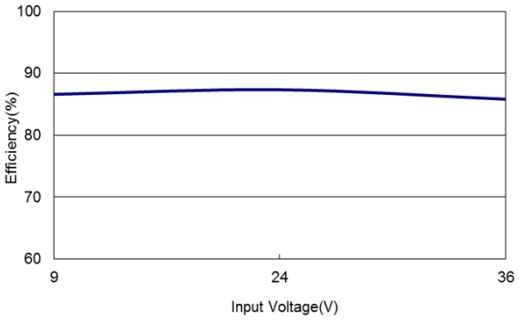

Figure 34: ERM01BB18 Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io1 = 0 to ±0.833A

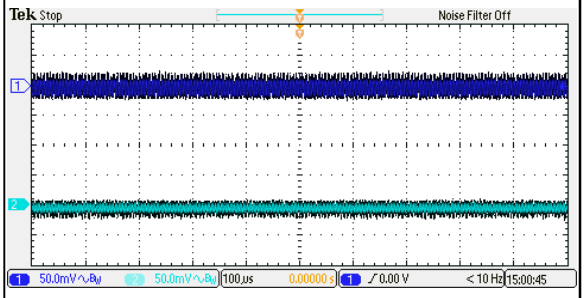

Figure 35: ERM01BB18 Ripple and Noise Measurement
Vin = 24Vdc Load: Io = ±0.833A
Ch 1: Vo1 Ch2: Vo2

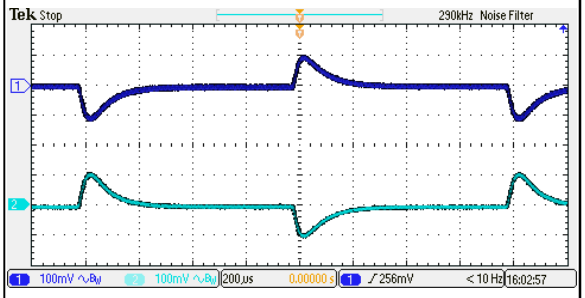

Figure 36: ERM01BB18 Transient Response Vin = 24Vdc
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo1 Ch2: Vo2

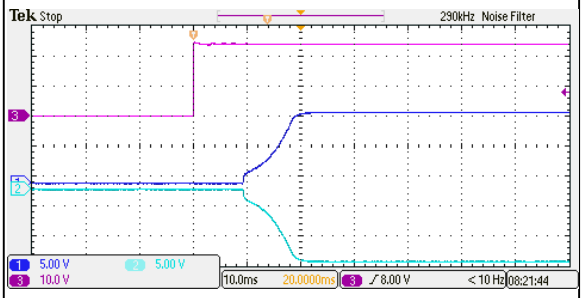

Figure 37: ERM01BB18 Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = ±0.833A
Ch1: Vo1 Ch2:Vo2 Ch3: Vin

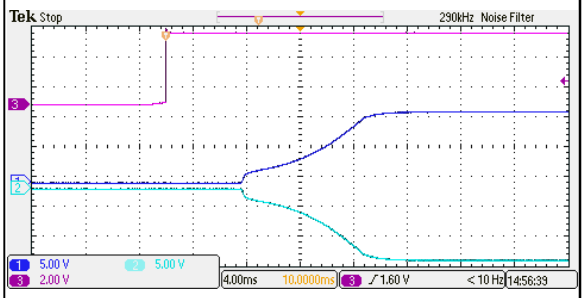

Figure 38: ERM01BB18 Output Voltage Startup Characteristic by On/Off
Vin = 24Vdc Load: Io = ±0.833A
Ch1: Vo1 Ch2:Vo2 Ch3: Vin

ERM01BB18 Performance Curves

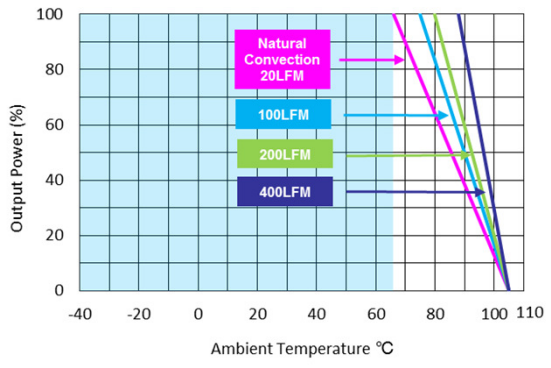

Figure 39: ERM01BB18 Derating Output Current vs Ambient Temperature Vin = 24Vdc Without Heatsink

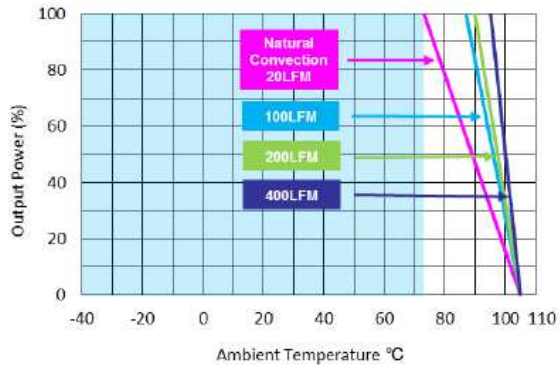

Figure 40: ERM01BB18 Derating Output Current vs Ambient Temperature Vin = 24Vdc With Heatsink

ERM01CC18 Performance Curves

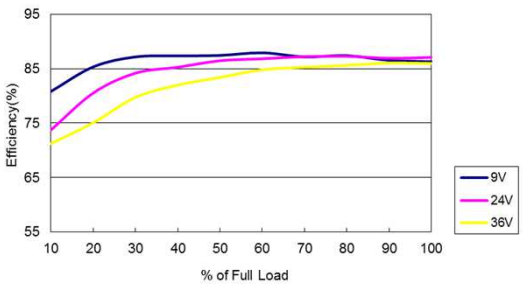

Figure 41: ERM01CC18 Efficiency Versus Output Current Curve
Vin = 9 to 36Vdc Load: Io = 0 to ±0.667A

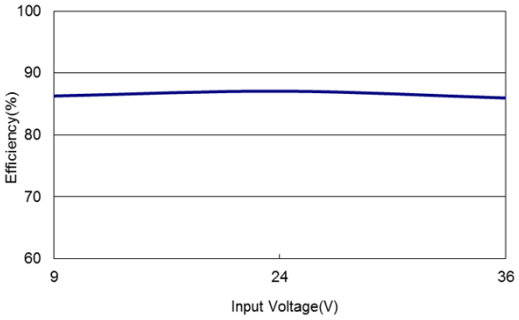

Figure 42: ERM01CC18 Efficiency Versus Input Voltage Curve
Vin = 9 to 36Vdc Load: Io = ±0.667A

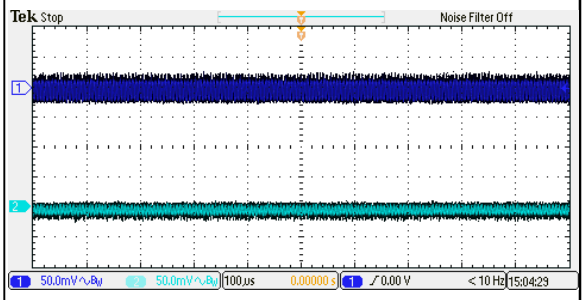

Figure 43: ERM01CC18 Ripple and Noise Measurement
Vin = 24Vdc Load: Io = ±0.667A
Ch 1: Vo1 Ch 2: Vo2

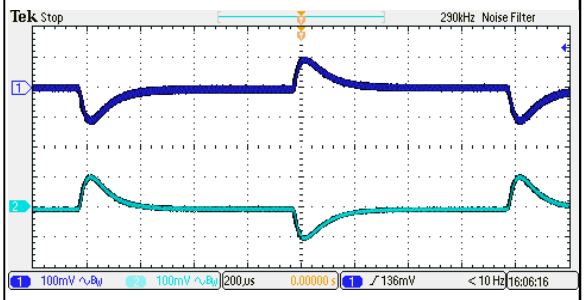

Figure 44: ERM01CC18 Transient Response
Vin = 24Vdc Load: Io = 100% to 75% load change
Ch 1: Vo1 Ch 2: Vo2

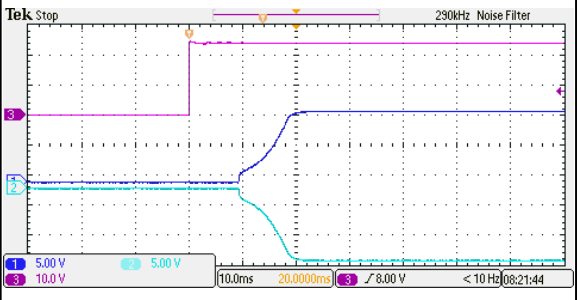

Figure 45: ERM01CC18 Output Voltage Startup Characteristic by Vin
Vin = 24Vdc Load: Io = ±0.667A
Ch1: Vo1 Ch2:Vo2 Ch3: Vin

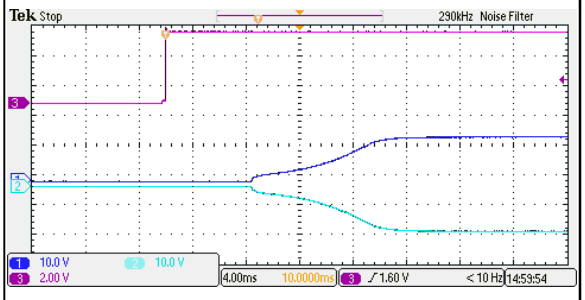

Figure 46: ERM01CC18 Output Voltage Startup Characteristic by On/Off
Vin = 24Vdc Load: Io = ±0.667A
Ch1: Vo1 Ch2:Vo2 Ch3: Vin

ERM01CC18 Performance Curves

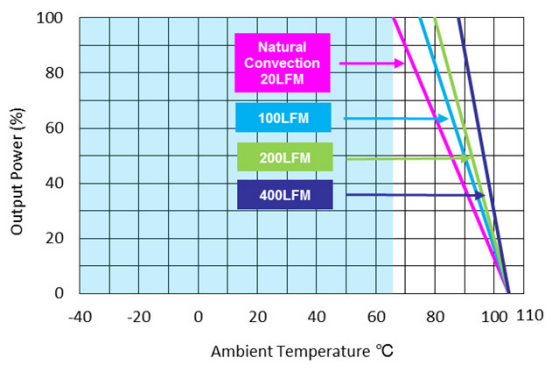

Figure 47: ERM01CC18 Derating Output Current vs Ambient Temperature Vin = 24Vdc Without Heatsink

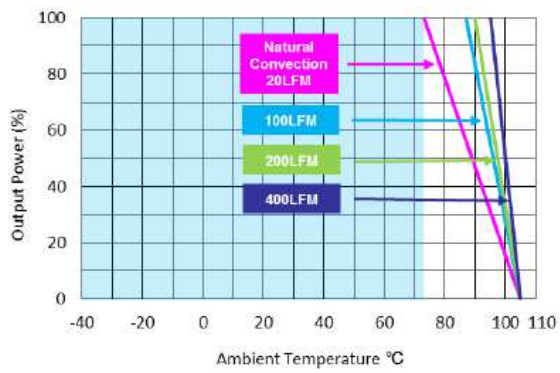

Figure 48: ERM01CC18 Derating Output Current vs Ambient Temperature Vin = 24Vdc With Heatsink

ERM04A36 Performance Curves

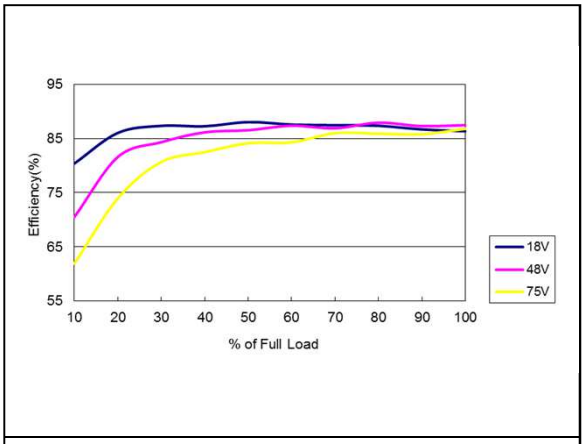

Figure 49: ERM04A36 Efficiency Versus Output Current Curve
Vin = 18 to 75Vdc Load: Io = 0 to 4A

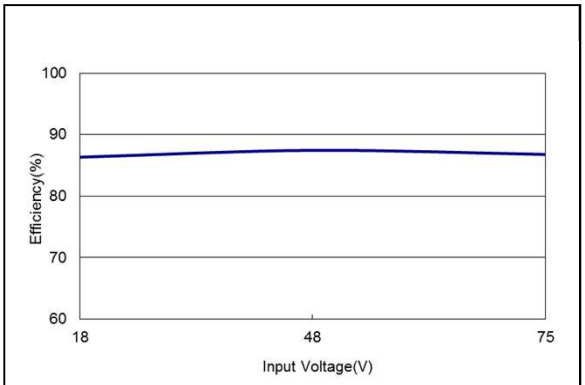

Figure 50: ERM04A36 Efficiency Versus Input Voltage Curve
Vin = 18 to 75Vdc Load: Io = 4A

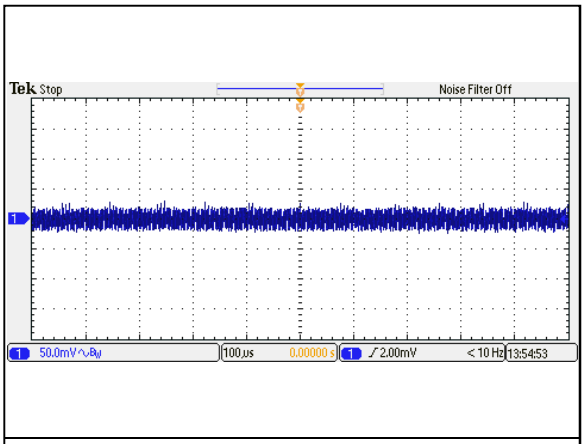

Figure 51: ERM04A36 Ripple and Noise Measurement
Vin = 48Vdc Load: Io = 4A
Ch 1: Vo

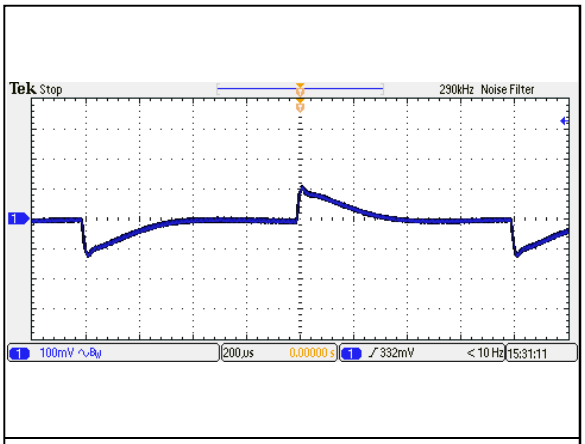

Figure 52: ERM04A36 Transient Response
Vin = 48Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

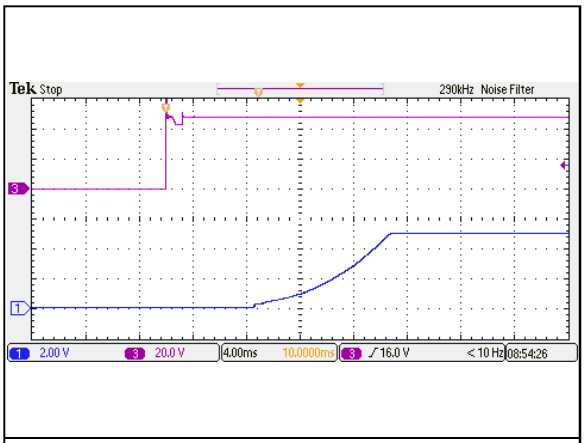

Figure 53: ERM04A36 Output Voltage Startup Characteristic by Vin
Vin = 48Vdc Load: Io = 4A
Ch1: Vo Ch3: Vin

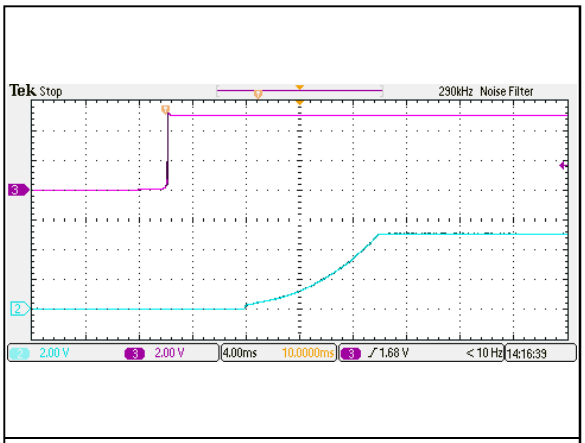

Figure 54: ERM04A36 Output Voltage Startup Characteristic by On/Off
Vin = 48Vdc Load: Io = 4A
Ch2: Vo Ch3: Vin

ERM04A36 Performance Curves

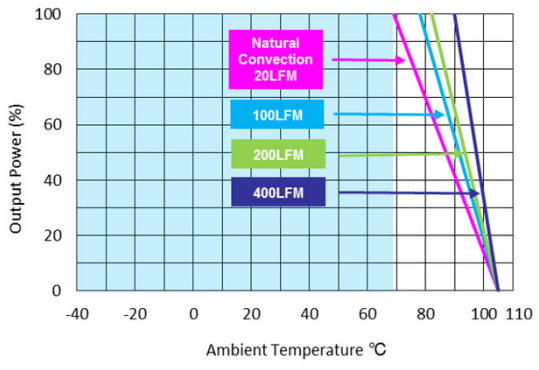

Figure 55: ERM04A36 Derating Output Current vs Ambient Temperature
Vin = 48Vdc Without Heatsink

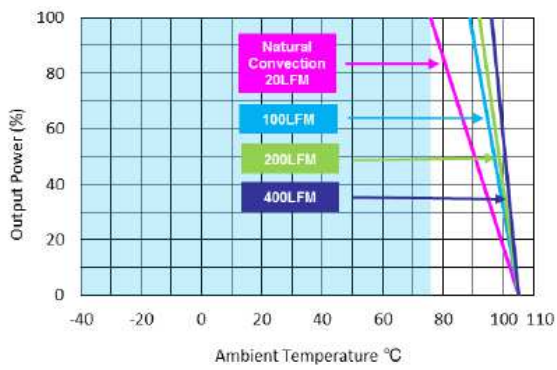

Figure 56: ERM04H36 Derating Output Current vs Ambient Temperature
Vin = 48Vdc With Heatsink

ERM01B36 Performance Curves

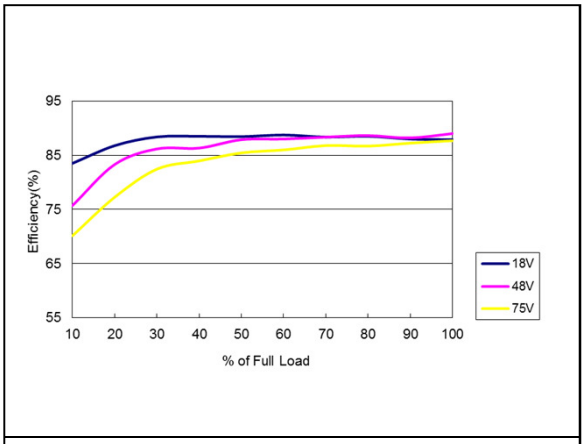

Figure 57: ERM01B36 Efficiency Versus Output Current Curve
Vin = 18 to 75Vdc Load: Io = 0 to 1.67A

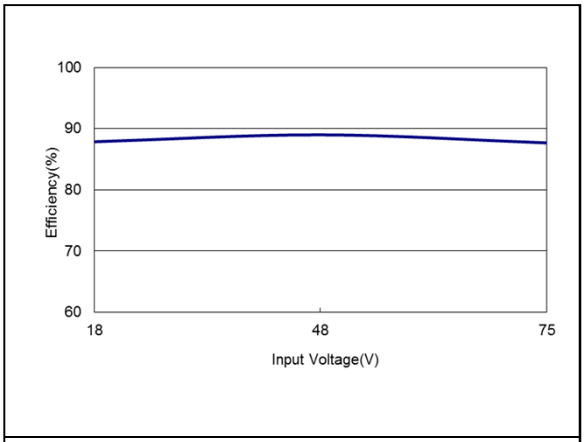

Figure 58: ERM01B36 Efficiency Versus Input Voltage Curve
Vin = 18 to 75Vdc Load: Io = 1.67A

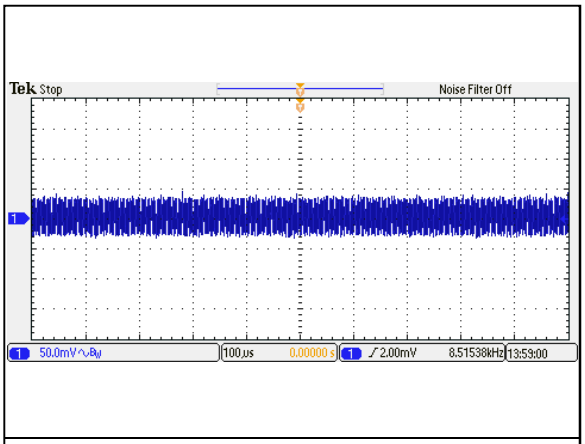

Figure 59: ERM01B36 Ripple and Noise Measurement
Vin = 48Vdc Load: Io = 1.67A
Ch 1: Vo

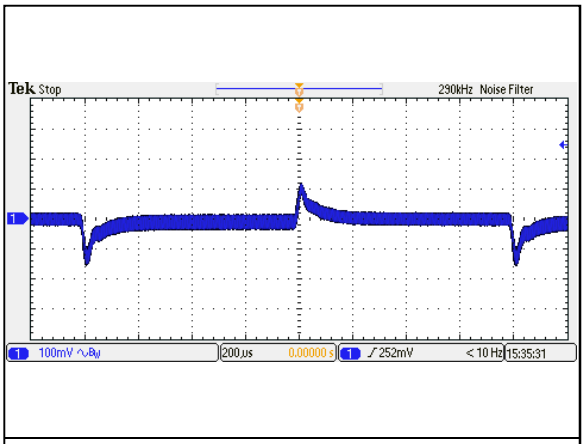

Figure 60: ERM01B36 Transient Response
Vin = 48Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

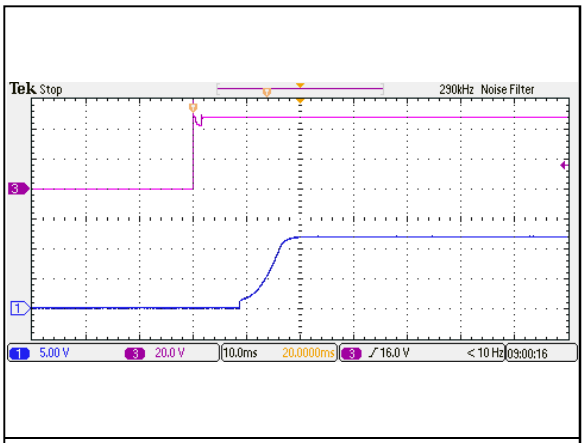

Figure 61: ERM01B36 Output Voltage Startup Characteristic by Vin
Vin = 48Vdc Load: Io = 1.67A
Ch1: Vo Ch3: Vin

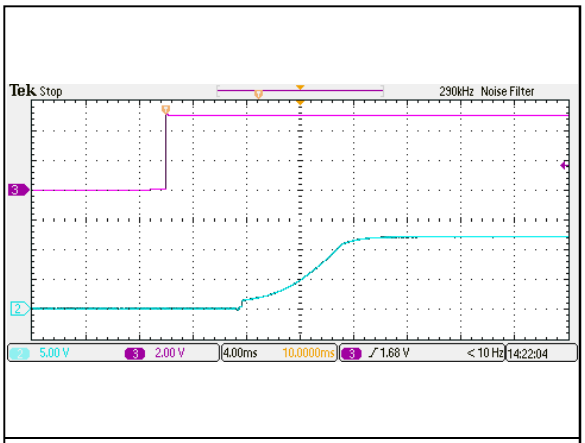

Figure 62: ERM01B36 Output Voltage Startup Characteristic by On/Off
Vin = 48Vdc Load: Io = 1.67A
Ch2: Vo Ch3: Vin

ERM01B36 Performance Curves

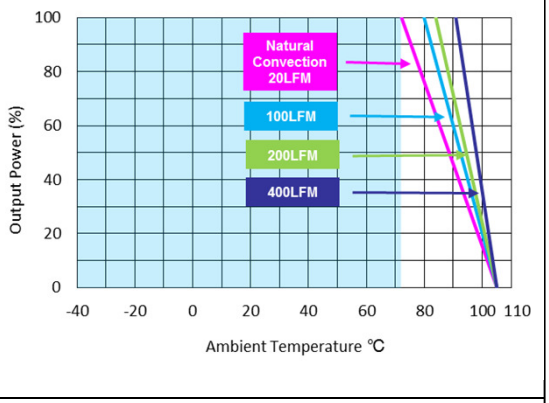

Figure 63: ERM01B36 Derating Output Current vs Ambient Temperature Vin = 48Vdc Without Heatsink

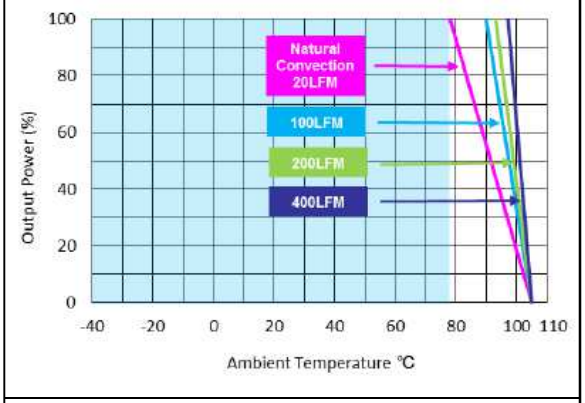

Figure 64: ERM01B36 Derating Output Current vs Ambient Temperature Vin = 48Vdc With Heatsink

ERM01C36 Performance Curves

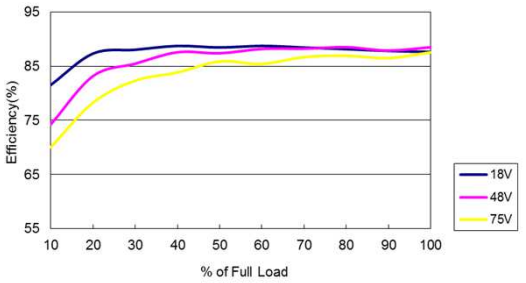

Figure 65: ERM01C36 Efficiency Versus Output Current Curve
Vin = 18 to 75Vdc Load: Io = 0 to 1.33A

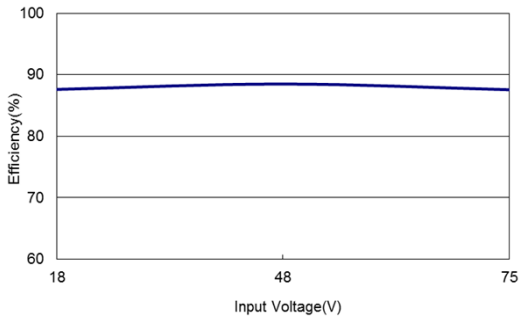

Figure 66: ERM01C36 Efficiency Versus Input Voltage Curve
Vin = 18 to 75Vdc Load: Io = 1.33A

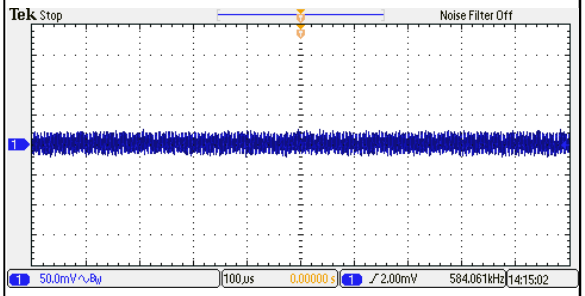

Figure 67: ERM01C36 Ripple and Noise Measurement
Vin = 48Vdc Load: Io = 1.33A
Ch 1: Vo

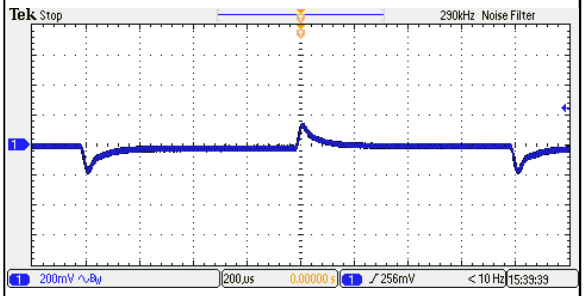

Figure 68: ERM01C36 Transient Response
Vin = 48Vdc Load: Io = 100% to 75% load change
Ch 1: Vo

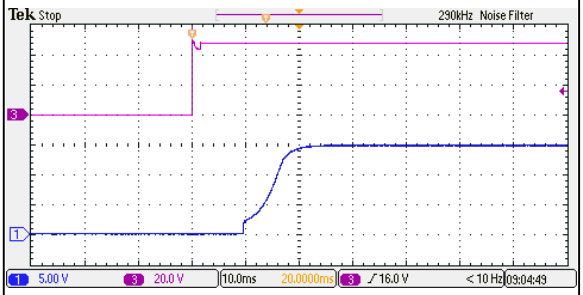

Figure 69: ERM01C36 Output Voltage Startup Characteristic by Vin
Vin = 48Vdc Load: Io = 1.33A
Ch1: Vo Ch3: Vin

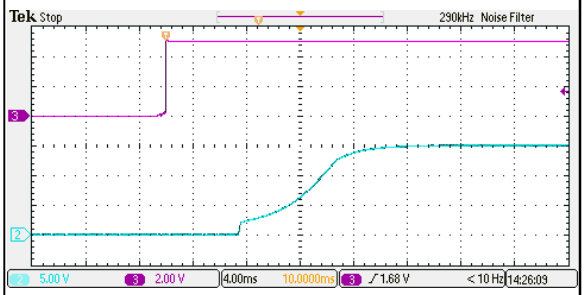

Figure 70: ERM01C36 Output Voltage Startup Characteristic by On/Off
Vin = 48Vdc Load: Io = 1.33A
Ch2: Vo Ch3: Vin