



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

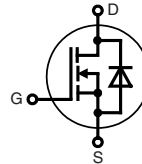
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



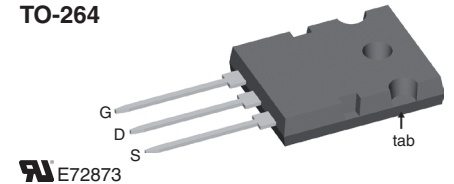
CoolMOS™ 1) Power MOSFET

Low $R_{DS(on)}$, high V_{DSS}
Superjunction MOSFET

$$\begin{aligned} V_{DSS} &= 600 \text{ V} \\ I_{D25} &= 85 \text{ A} \\ R_{DS(on) \text{ max}} &= 36 \text{ m}\Omega \end{aligned}$$



TO-264



MOSFET			
Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_{VJ} = 25^\circ\text{C}$	600	V
V_{GS}		± 20	V
I_{D25}	$T_C = 25^\circ\text{C}$	85	A
I_{D100}	$T_C = 100^\circ\text{C}$	55	A
E_{AS}	single pulse $I_D = 10 \text{ A}; T_C = 25^\circ\text{C}$	1800	mJ
E_{AR}	repetitive $I_D = 20 \text{ A}; T_C = 25^\circ\text{C}$	1	mJ
dV/dt	MOSFET dV/dt ruggedness $V_{DS} = 0 \dots 480 \text{ V}$	50	V/ns

Features

- 3rd generation CoolMOS™ 1) power MOSFET
- high blocking capability
- lowest resistance
- avalanche rated for unclamped inductive switching (UIS)
- low thermal resistance due to reduced chip thickness

Applications

- Switched mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)
- Power factor correction (PFC)
- Welding
- Inductive heating

1) CoolMOS™ is a trademark of Infineon Technologies AG.

Symbol	Conditions	Characteristic Values			
		(T _{VJ} = 25°C, unless otherwise specified)			
		min.	typ.	max.	
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}; I_D = I_{D100}^{\text{①}}$		30	36	mΩ
$V_{GS(th)}$	$V_{DS} = V_{GS}; I_D = 5.4 \text{ mA}$	2		4	V
I_{DSS}	$V_{DS} = V_{DSS}; V_{GS} = 0 \text{ V}$			50 500	μA μA
I_{GSS}	$V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$			± 200	nA
C_{iss} C_{oss} C_{rss}	$V_{GS} = 0 \text{ V}; V_{DS} = 25 \text{ V}$ $f = 1 \text{ MHz}$		13.6 4.4 290		nF nF pF
Q_g Q_{gs} Q_{gd}	$V_{GS} = 0 \text{ to } 10 \text{ V}; V_{DS} = 350 \text{ V}; I_D = 85 \text{ A}$		500 50 240	640	nC nC nC
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 13 \text{ V}; V_{DS} = 380 \text{ V}$ $I_D = 85 \text{ A}; R_G = 1.0 \Omega$		20 27 110 10		ns ns ns ns
R_{thJC}				0.18	K/W

① Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $d \leq 2\%$

Source-Drain Diode

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
I_S	$V_{GS} = 0\text{ V}$			85
I_{SM}				250
V_{SD}	$I_F = 85\text{ A}; V_{GS} = 0\text{ V}$			1.2
t_{rr}	$I_F = 85\text{ A}; -di_F/dt = 200\text{ A}/\mu\text{s}; V_R = 350\text{ V}$	580		ns
Q_{RM}		46		μC
I_{RM}		140		A

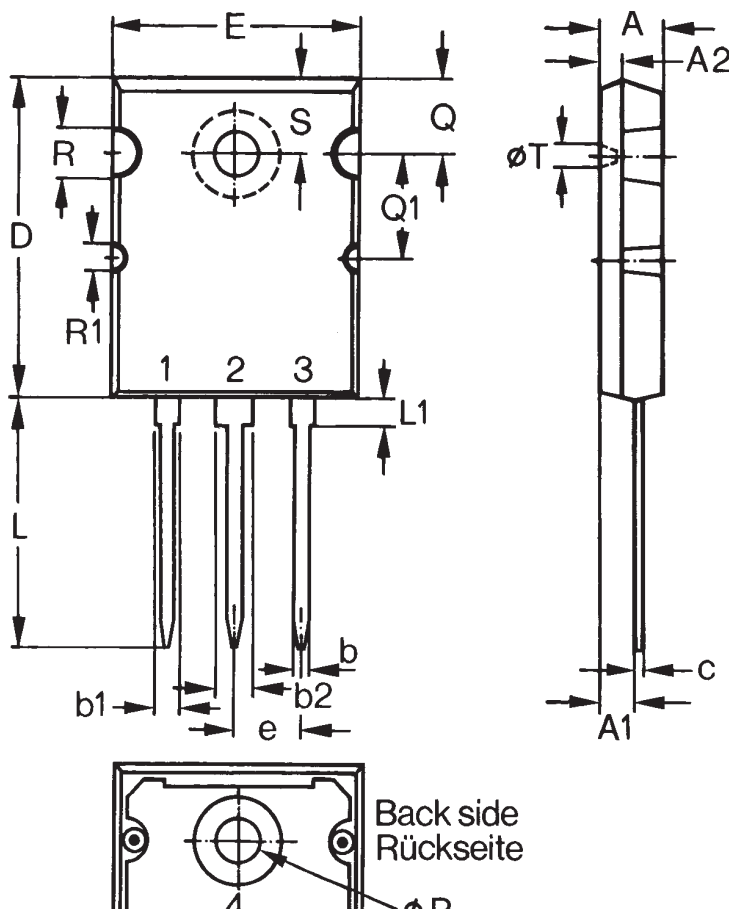
(T_{VJ} = 25°C, unless otherwise specified)

Component

Symbol	Conditions	Maximum Ratings		
T_{VJ}	operating	-55...+150		°C
T_{stg}		-55...+150		°C
M_d	mounting torque	0.8 ... 1.2		Nm

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
R_{thCH}	with heatsink compound	0.15		K/W
Weight		10		g

TO-264 Outline

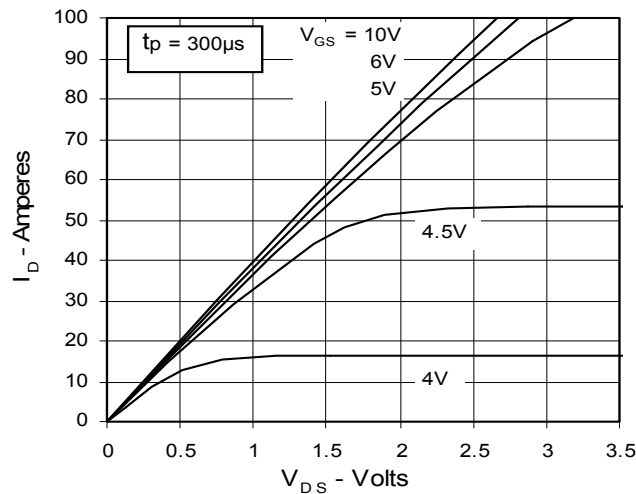


SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.185	.209	4.70	5.31
A1	.102	.118	2.59	3.00
b	.037	.055	0.94	1.40
b1	.087	.102	2.21	2.59
b2	.110	.126	2.79	3.20
C	.017	.029	0.43	0.74
D	1.007	1.047	25.58	26.59
E	.760	.799	19.30	20.29
e	.215 BSC		5.46 BSC	
L	.193	.201	4.90	5.10
L1	.088	.096	2.24	2.44
L2	.075	.083	1.90	2.10
L3	.000	.004	0.00	0.10
ØP	.122	.138	3.10	3.51
Q	.240	.256	6.10	6.50
Q1	.330	.346	8.38	8.79
ØR	.155	.187	3.94	4.75
ØR1	.085	.093	2.16	2.36
S	.243	.253	6.17	6.43

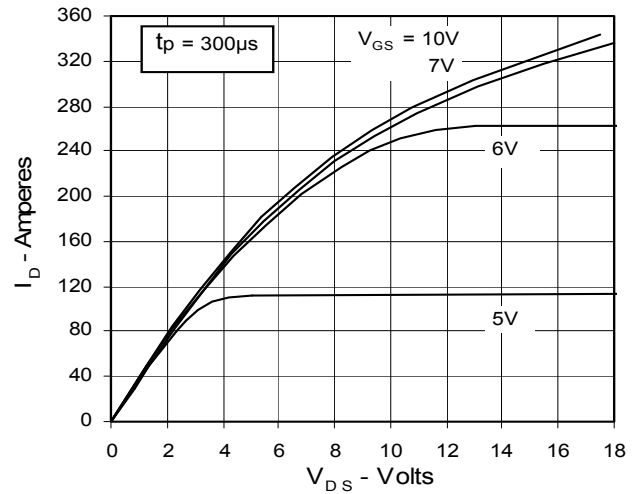
NOTE 1. This drawing meets all dimension requirement of JEDEC outline TO-264AA except L, L1, L2, L3

2. All metal surface are solder plated except trimmed area

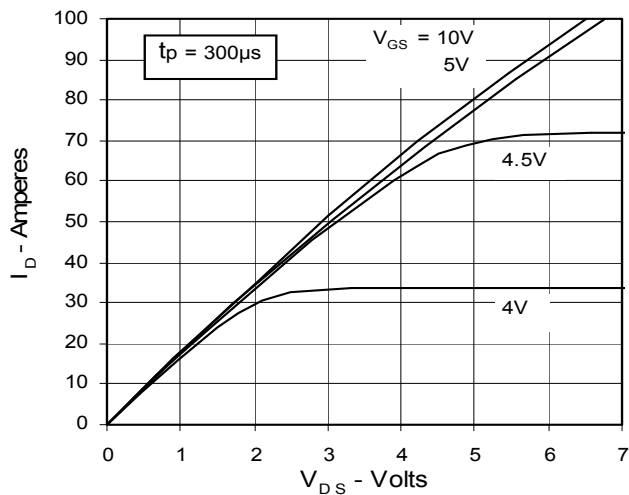
**Fig. 1. Output Characteristics
@ 25 Deg. C**



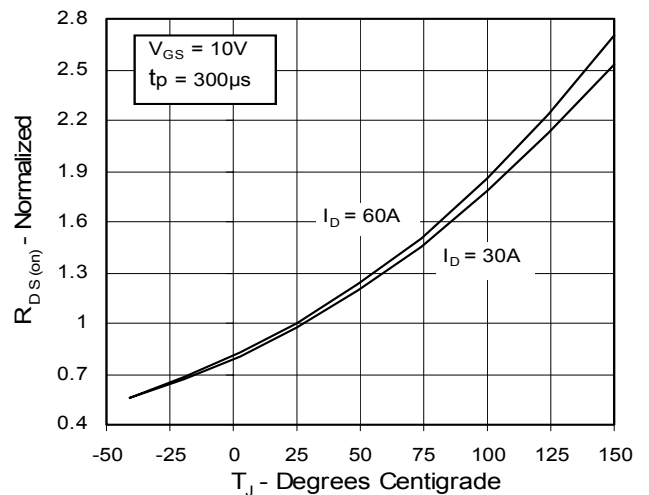
**Fig. 2. Extended Output Characteristics
@ 25 deg. C**



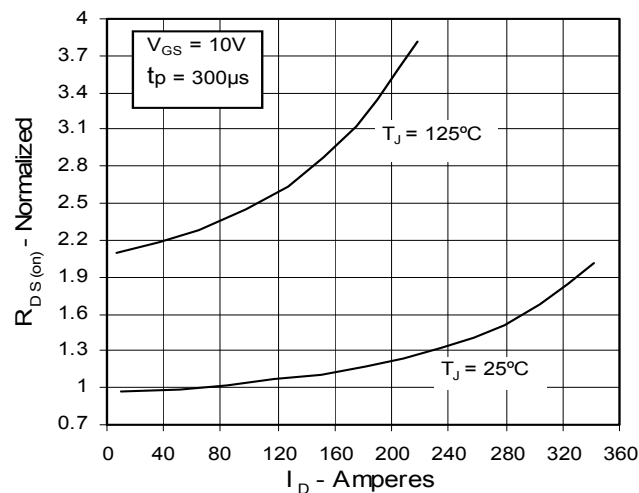
**Fig. 3. Output Characteristics
@ 125 Deg. C**



**Fig. 4. $R_{DS(on)}$ Normalized to I_{D100} Value
vs. Junction Temperature**



**Fig. 5. $R_{DS(on)}$ Normalized to
 I_{D100} Value vs. I_D**



**Fig. 6. Drain Current vs. Case
Temperature**

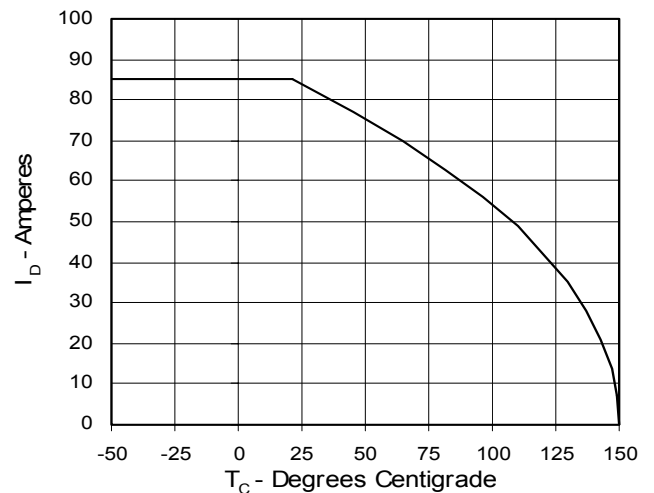


Fig. 7. Input Admittance

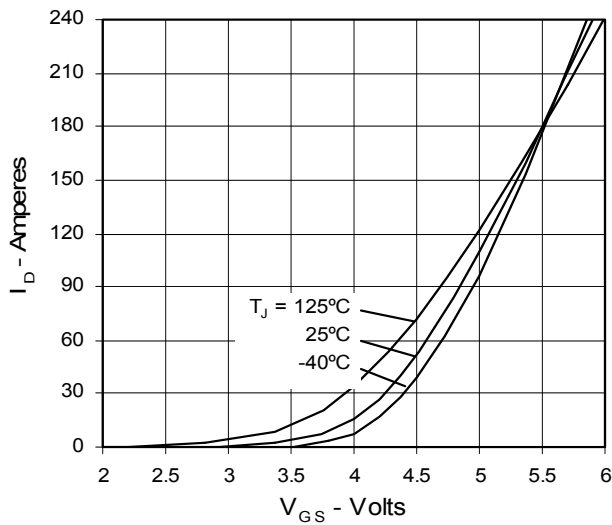


Fig. 8. Transconductance

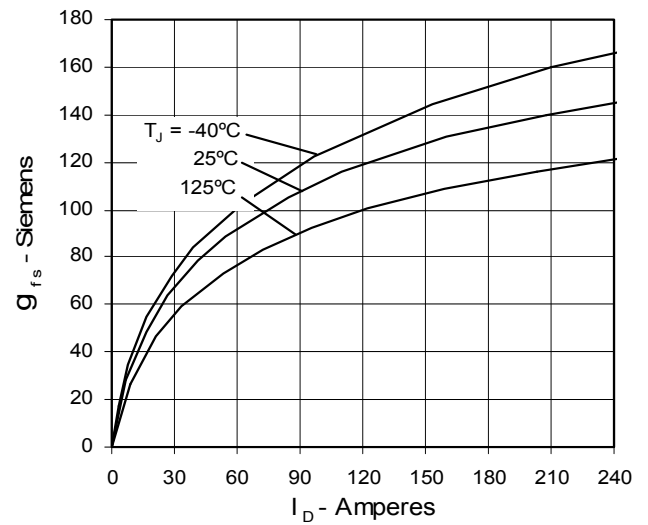


Fig. 9. Source Current vs. Source-To-Drain Voltage

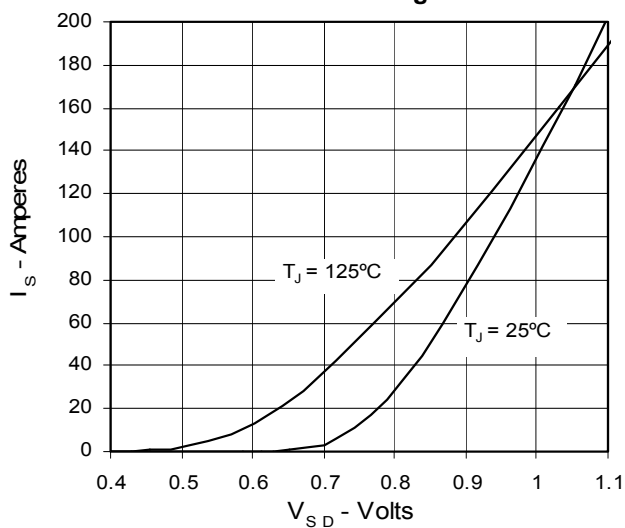


Fig. 10. Gate Charge

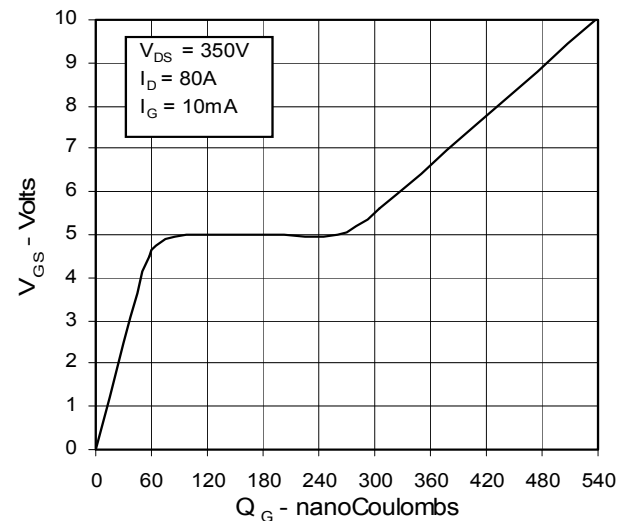


Fig. 11. Capacitance

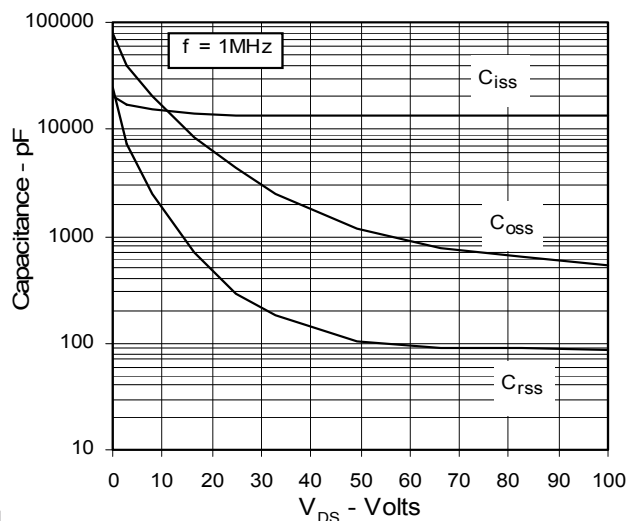


Fig. 12. Maximum Transient Thermal Resistance

