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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!



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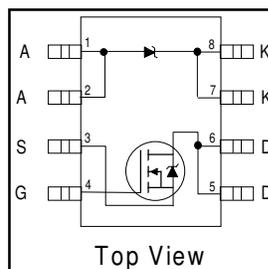
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



IRF7523D1

FETKY™ MOSFET / Schottky Diode

- Co-packaged HEXFET® Power MOSFET and Schottky Diode
- N-Channel HEXFET
- Low V_F Schottky Rectifier
- Generation 5 Technology
- Micro8™ Footprint

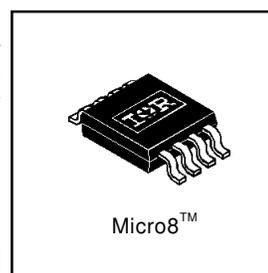


$V_{DSS} = 30V$
$R_{DS(on)} = 0.11\Omega$
Schottky $V_f = 0.39V$

Description

The FETKY™ family of co-packaged HEXFETs and Schottky diodes offer the designer an innovative board space saving solution for switching regulator applications. Generation 5 HEXFETs utilize advanced processing techniques to achieve extremely low on-resistance per silicon area. Combining this technology with International Rectifier's low forward drop Schottky rectifiers results in an extremely efficient device suitable for use in a wide variety of portable electronics applications like cell phone, PDA, etc.

The new Micro8™ package, with half the footprint area of the standard SO-8, provides the smallest footprint available in an SOIC outline. This makes the Micro8™ an ideal device for applications where printed circuit board space is at a premium. The low profile (<1.1mm) of the Micro8™ will allow it to fit easily into extremely thin application environments such as portable electronics and PCMCIA cards.



Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

Parameter		Maximum	Units
$I_D @ T_A = 25^\circ C$	Continuous Drain Current, $V_{GS}@10V^{(4)}$	2.7	A
$I_D @ T_A = 70^\circ C$		2.1	
I_{DM}	Pulsed Drain Current ⁽¹⁾	21	
$P_D @ T_A = 25^\circ C$	Power Dissipation ⁽⁴⁾	1.25	W
$P_D @ T_A = 70^\circ C$		0.8	
	Linear Derating Factor	10	W/°C
V_{GS}	Gate-to-Source Voltage	± 20	V
dv/dt	Peak Diode Recovery dv/dt ⁽²⁾	6.2	V/ns
T_J, T_{STG}	Junction and Storage Temperature Range	-55 to +150	°C

Thermal Resistance Ratings

Parameter		Maximum	Units
$R_{\theta JA}$	Junction-to-Ambient ⁽⁴⁾	100	°C/W

Notes:

- ① Repetitive rating; pulse width limited by maximum junction temperature (see figure 11)
- ② $I_{SD} \leq 1.7A$, $di/dt \leq 120A/\mu s$, $V_{DD} \leq V_{(BR)DSS}$, $T_J \leq 150^\circ C$
- ③ Pulse width $\leq 300\mu s$; duty cycle $\leq 2\%$
- ④ When mounted on 1 inch square copper board to approximate typical multi-layer PCB thermal resistance

MOSFET Electrical Characteristics @ T_J = 25°C (unless otherwise specified)

Parameter		Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source Breakdown Voltage	30	—	—	V	V _{GS} = 0V, I _D = 250μA
R _{DS(on)}	Static Drain-to-Source On-Resistance	—	0.090	0.130	Ω	V _{GS} = 10V, I _D = 1.7A ③
		—	0.140	0.190		V _{GS} = 4.5V, I _D = 0.85A ③
V _{GS(th)}	Gate Threshold Voltage	1.0	—	—	V	V _{DS} = V _{GS} , I _D = 250μA
g _{fs}	Forward Transconductance	1.9	—	—	S	V _{DS} = 10V, I _D = 0.85A
I _{DSS}	Drain-to-Source Leakage Current	—	—	1.0	μA	V _{DS} = 24V, V _{GS} = 0V
		—	—	25		V _{DS} = 24V, V _{GS} = 0V, T _J = 125°C
I _{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	V _{GS} = -20V
	Gate-to-Source Reverse Leakage	—	—	100		V _{GS} = 20V
Q _g	Total Gate Charge	—	7.8	12	nC	I _D = 1.7A
Q _{gs}	Gate-to-Source Charge	—	1.2	1.8		V _{DS} = 24V
Q _{gd}	Gate-to-Drain ("Miller") Charge	—	2.5	3.8		V _{GS} = 10V (see figure 6) ③
t _{d(on)}	Turn-On Delay Time	—	4.7	—		V _{DD} = 15V
t _r	Rise Time	—	10	—	ns	I _D = 1.7A
t _{d(off)}	Turn-Off Delay Time	—	12	—		R _G = 6.1Ω
t _f	Fall Time	—	5.3	—		R _D = 8.7Ω ③
C _{iss}	Input Capacitance	—	210	—		V _{GS} = 0V
C _{oss}	Output Capacitance	—	80	—	pF	V _{DS} = 25V
C _{riss}	Reverse Transfer Capacitance	—	32	—		f = 1.0MHz (see figure 5)

MOSFET Source-Drain Ratings and Characteristics

Parameter		Min.	Typ.	Max.	Units	Conditions
I _S	Continuous Source Current (Body Diode)	—	—	1.25	A	
I _{SM}	Pulsed Source Current (Body Diode)	—	—	21		
V _{SD}	Body Diode Forward Voltage	—	—	1.2	V	T _J = 25°C, I _S = 1.7A, V _{GS} = 0V
t _{rr}	Reverse Recovery Time (Body Diode)	—	40	60	ns	T _J = 25°C, I _F = 1.7A
Q _{rr}	Reverse Recovery Charge	—	48	72	nC	di/dt = 100A/μs ③

Schottky Diode Maximum Ratings

	Parameter	Max.	Units	Conditions	
I _{F(av)}	Max. Average Forward Current	1.9	A	50% Duty Cycle. Rectangular Wave, T _A = 25°C	
		1.3		See Fig.14 T _A = 70°C	
I _{SM}	Max. peak one cycle Non-repetitive Surge current	120	A	5μs sine or 3μs Rect. pulse	Following any rated load condition & with V _{RRM} applied
		11		10ms sine or 6ms Rect. pulse	

Schottky Diode Electrical Specifications

	Parameter	Max.	Units	Conditions	
V _{FM}	Max. Forward voltage drop	0.50	V	I _F = 1.0A, T _J = 25°C	
		0.62		I _F = 2.0A, T _J = 25°C	
		0.39		I _F = 1.0A, T _J = 125°C	
		0.57		I _F = 2.0A, T _J = 125°C	
I _{RM}	Max. Reverse Leakage current	0.06	mA	V _R = 30V	T _J = 25°C
		16			T _J = 125°C
C _t	Max. Junction Capacitance	92	pF	V _R = 5Vdc (100kHz to 1 MHz) 25°C	
dv/dt	Max. Voltage Rate of Charge	3600	V/ μs	Rated V _R	

Power Mosfet Characteristics

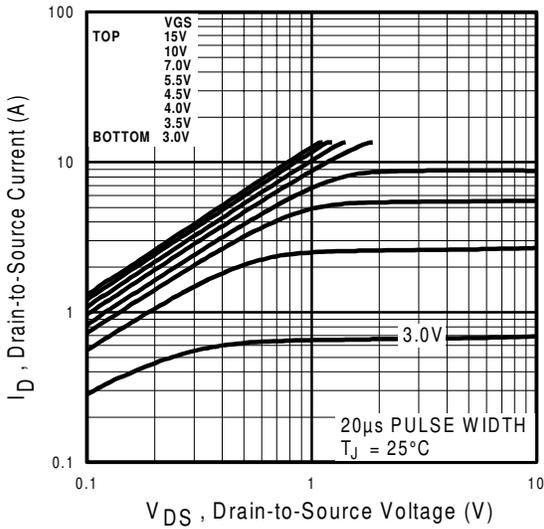


Fig 1. Typical Output Characteristics

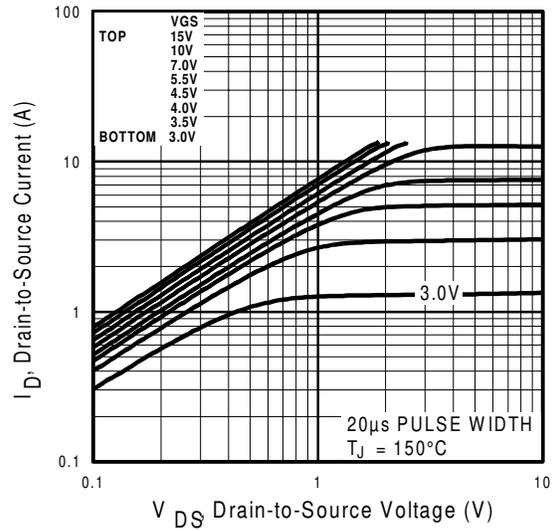


Fig 2. Typical Output Characteristics

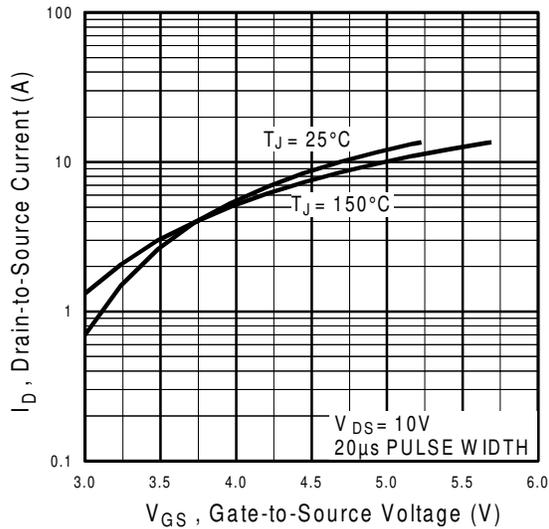


Fig 3. Typical Transfer Characteristics

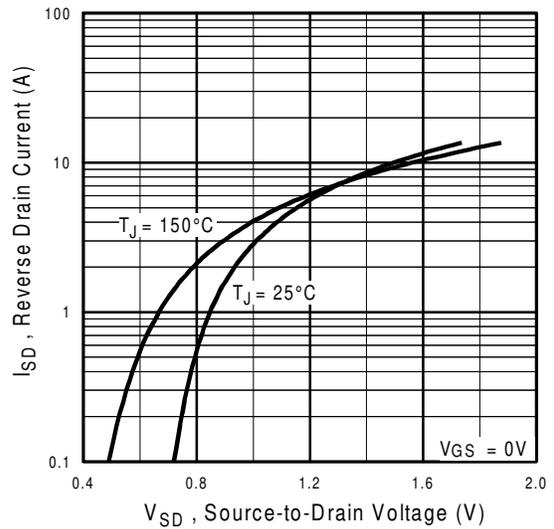


Fig 4. Typical Source-Drain Diode Forward Voltage

Power Mosfet Characteristics

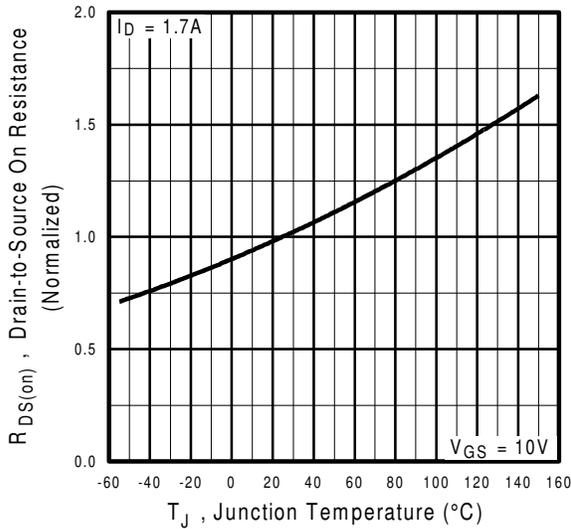


Fig 5. Normalized On-Resistance Vs. Temperature

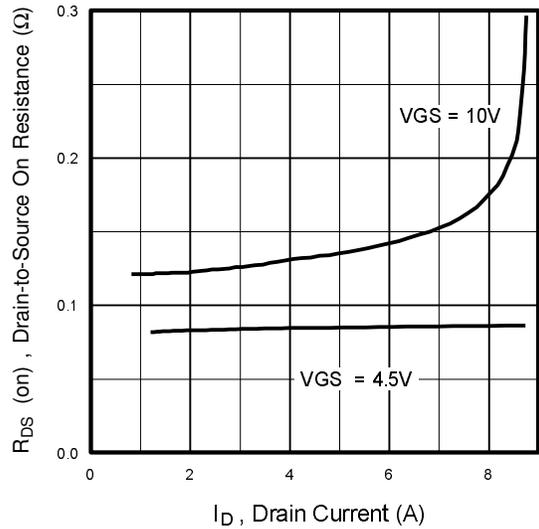


Fig 6. Typical On-Resistance Vs. Drain Current

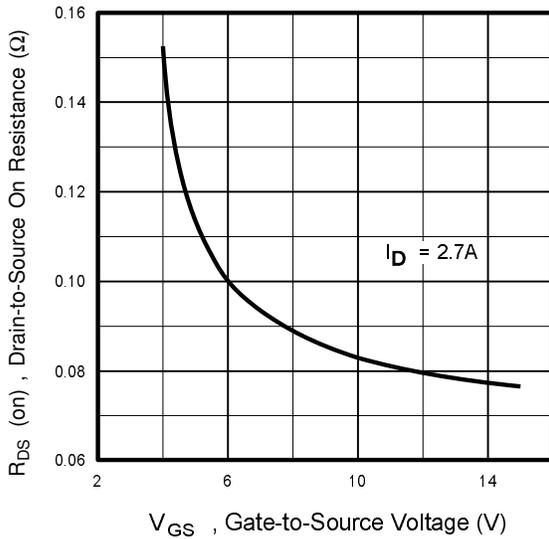


Fig 7. Typical On-Resistance Vs. Gate Voltage

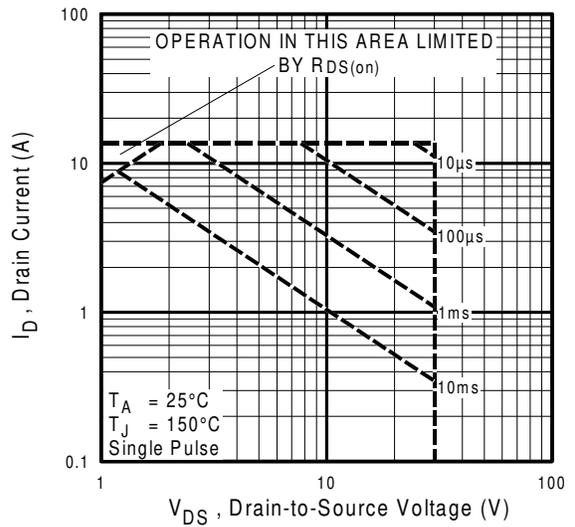


Fig 8. Maximum Safe Operating Area

Power Mosfet Characteristics

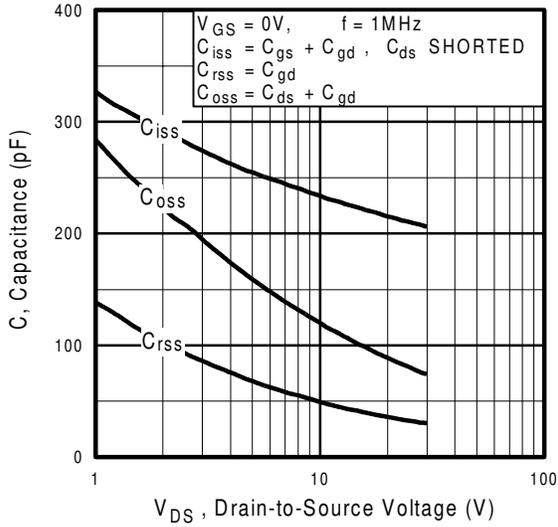


Fig 9. Typical Capacitance Vs. Drain-to-Source Voltage

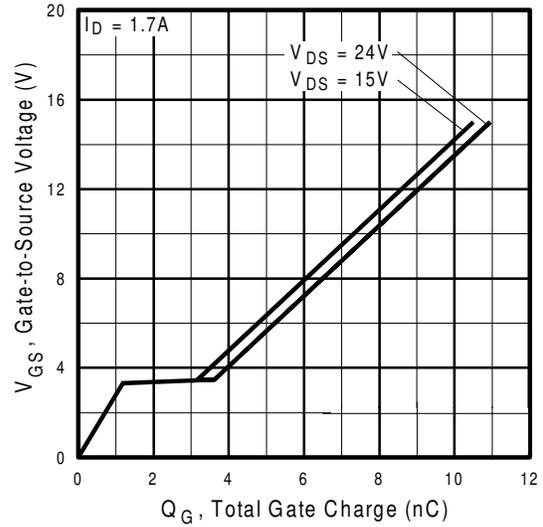


Fig 10. Typical Gate Charge Vs. Gate-to-Source Voltage

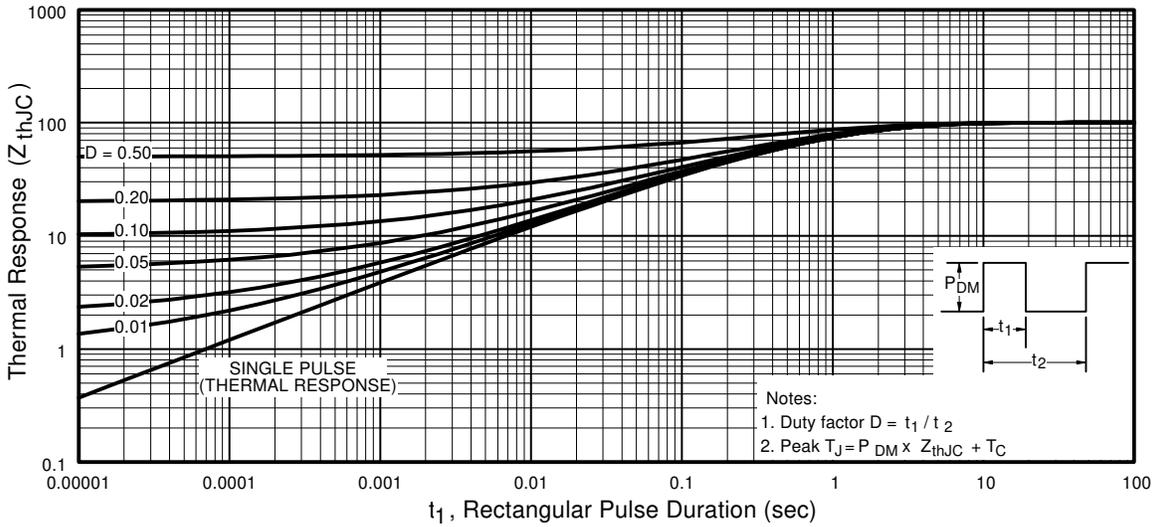


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

Schottky Diode Characteristics

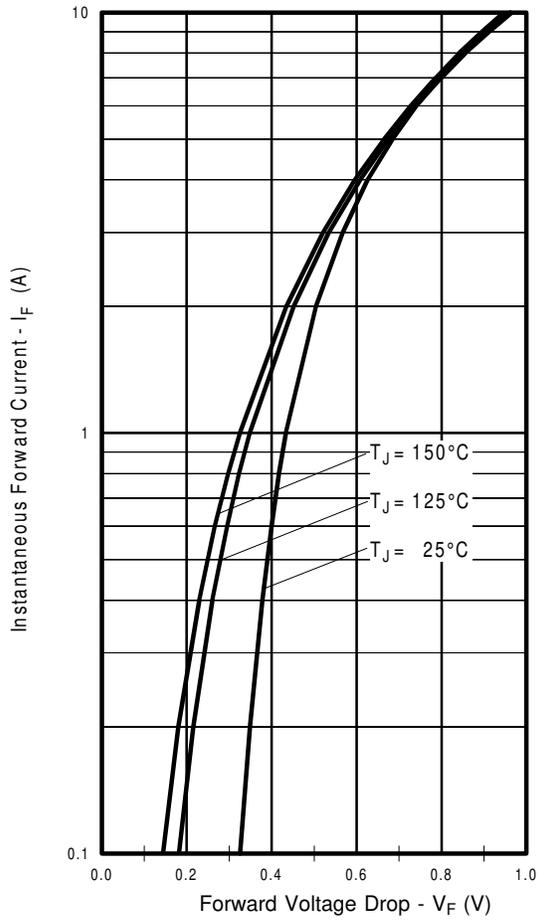


Fig. 12 - Typical Forward Voltage Drop Characteristics

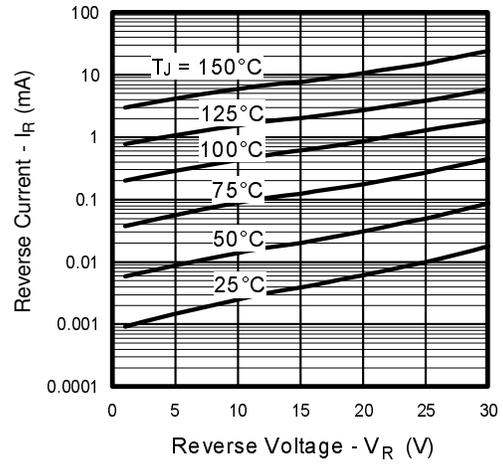


Fig. 13 - Typical Values of Reverse Current Vs. Reverse Voltage

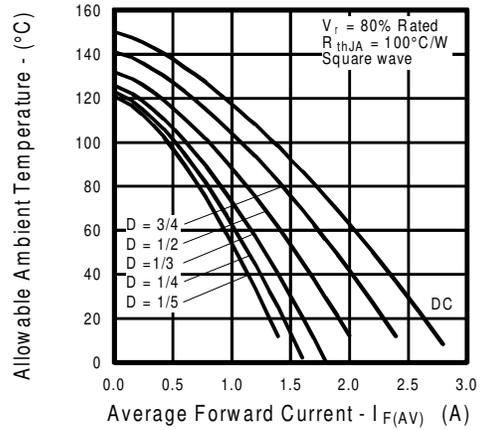
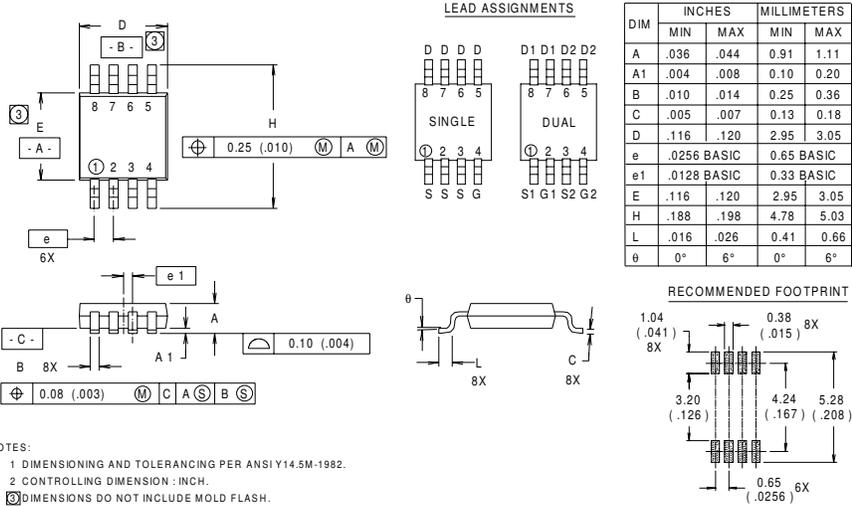


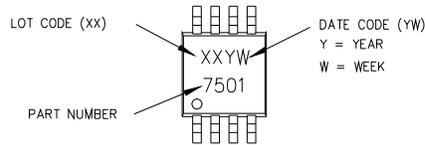
Fig.14 - Maximum Allowable Ambient Temp. Vs. Forward Current

Micro8™ Package Details



Part Marking

EXAMPLE: THIS IS AN IRF7501



WW = (1-26) IF PRECEDED BY LAST DIGIT OF CALENDAR YEAR

DATE CODE EXAMPLES:

YWW = 9503 = 5C
YWW = 9532 = EF

YEAR	Y	WORK WEEK	W
2001	1	01	A
2002	2	02	B
2003	3	03	C
1994	4	04	D
1995	5		
1996	6		
1997	7		
1998	8		
1999	9		
2000	0	24	X
		25	Y
		26	Z

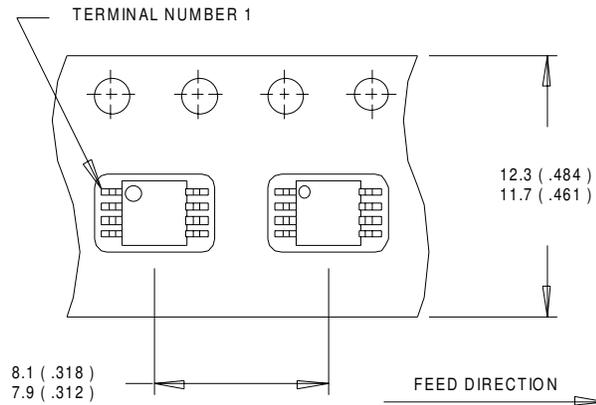
WW = (27-52) IF PRECEDED BY A LETTER

YEAR	Y	WORK WEEK	W
2001	A	27	A
2002	B	28	B
2003	C	29	C
1994	D	30	D
1995	E		
1996	F		
1997	G		
1998	H		
1999	J		
2000	K	50	X
		51	Y
		52	Z

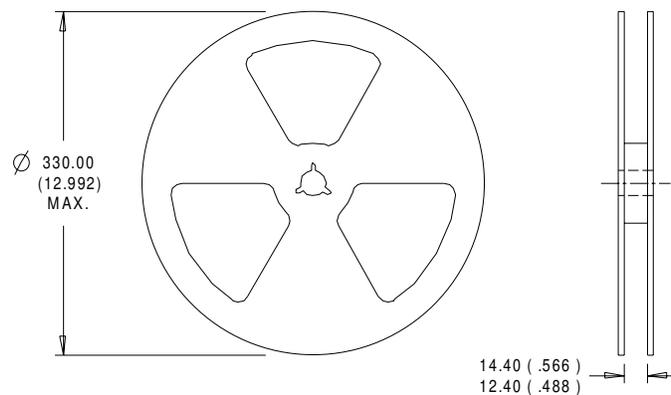
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International
IR Rectifier

Micro8™ Tape & Reel



- NOTES:
1. OUTLINE CONFORMS TO EIA-481 & EIA-541.
 2. CONTROLLING DIMENSION : MILLIMETER.



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International
IR Rectifier

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