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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!



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



HEXFRED® Ultrafast Diodes, 300 A (INT-A-PAK Power Modules)


INT-A-PAK

FEATURES

- Electrically isolated: DCB base plate
- Standard JEDEC® package
- Simplified mechanical designs, rapid assembly
- High surge capability
- Large creepage distances
- Case style INT-A-PAK
- Designed and qualified for industrial level
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

PRODUCT SUMMARY

V_R	1200 V
V_F (typical) at 300 A at 25 °C	2.18 V
t_{rr} (typical) at 45 A	233 ns
$I_{F(DC)}$ at T_C	300 A at 60 °C
Package	INT-A-PAK
Circuit	Single diode

REMARKS

- Product reliability results valid for $T_J = 150$ °C
- Recommended operation temperature $T_{op} = 150$ °C

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Cathode to anode voltage	V_R		1200	V
Continuous forward current	I_F	$T_C = 25$ °C	375	A
		$T_C = 60$ °C	300	
Single pulse forward current	I_{FSM}	$T_J = 25$ °C	2400	
Maximum power dissipation	P_D	$T_C = 25$ °C	1040	W
		$T_C = 60$ °C	750	
RMS isolation voltage	V_{ISOL}	50 Hz, circuit to base, all terminal shorted, $t = 1$ s	3500	V
Junction temperature range	T_J		-40 to +150	°C
Storage temperature range	T_{Stg}		-40 to +150	

ELECTRICAL SPECIFICATIONS PER LEG ($T_J = 25$ °C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Cathode to anode breakdown voltage	V_{BR}	$I_R = 500$ μ A	1200	-	-	V
Maximum forward voltage	V_{FM}	$I_F = 300$ A	-	2.18	2.23	
		$I_F = 300$ A, $T_J = 150$ °C	-	2.24	2.47	
Maximum reverse leakage current	I_{RM}	$V_R = 1200$ V	-	0.06	0.2	mA
		$T_J = 150$ °C, $V_R = 1200$ V	-	-	20	

**DYNAMIC RECOVERY CHARACTERISTICS** ($T_J = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Diode reverse recovery charge	Q_{rr}	$T_J = 25\text{ }^{\circ}\text{C}$	-	3.5	-	μC
		$T_J = 125\text{ }^{\circ}\text{C}$	-	10.4	-	
Reverse recovery time	t_{rr}	$T_J = 25\text{ }^{\circ}\text{C}$	-	233	-	ns
		$T_J = 125\text{ }^{\circ}\text{C}$	-	396	-	
Reverse recovery current	I_{rr}	$T_J = 25\text{ }^{\circ}\text{C}$	-	30	-	A
		$T_J = 125\text{ }^{\circ}\text{C}$	-	53	-	

THERMAL - MECHANICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum internal thermal resistance, junction to case per leg	R_{thJC}	DC operation	0.12	$^{\circ}\text{C/W}$
Typical thermal resistance, case to heatsink per module	R_{thCS}	Mounting surface flat, smooth and greased	0.05	
Mounting torque $\pm 10\%$	to heatsink	A mounting compound is recommended and the torque should be rechecked after a period of 3 hours to allow for the spread of the compound.	4	Nm
	busbar		6	
Approximate weight			200	g
			7.1	oz.
Case style			New INT-A-PAK	

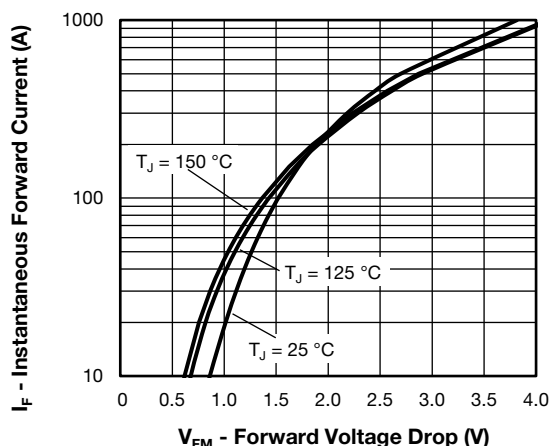


Fig. 1 - Typical Forward Voltage Drop Characteristics

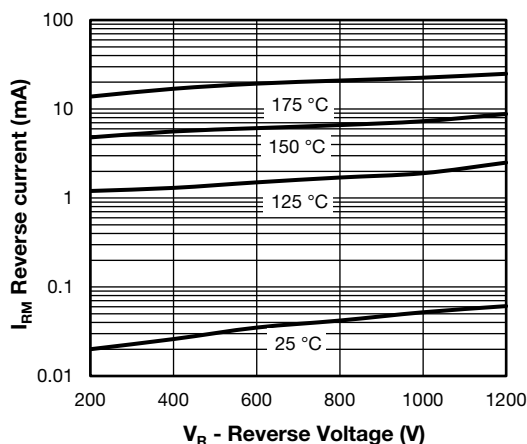


Fig. 2 - Typical Value of Reverse Current vs. Reverse Voltage

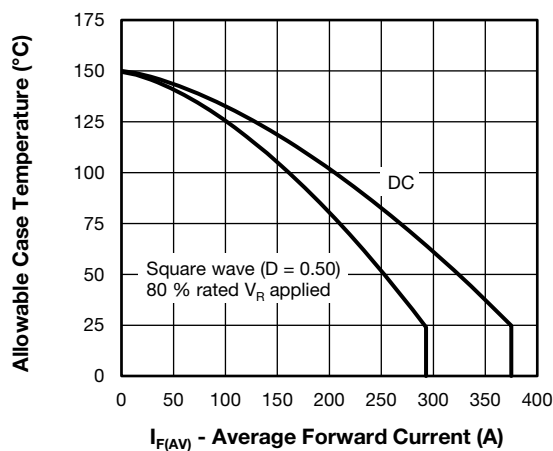


Fig. 3 - Maximum Allowable Case Temperature vs. Average Forward Current

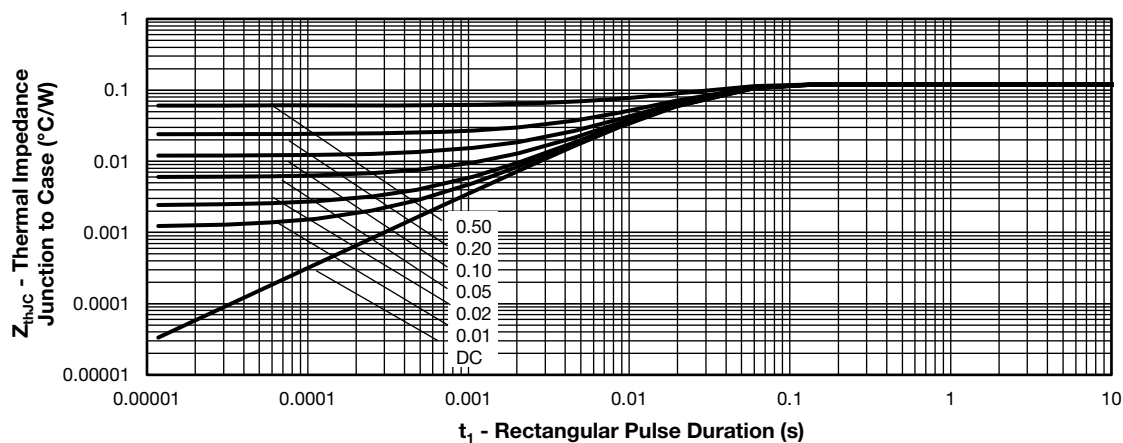
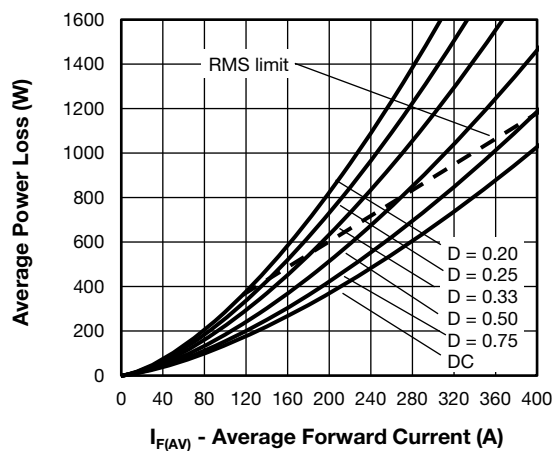
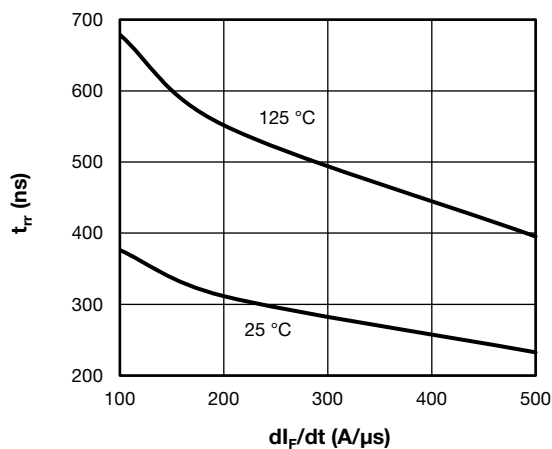
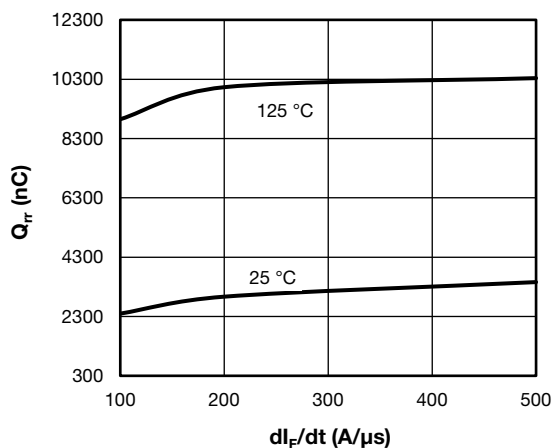
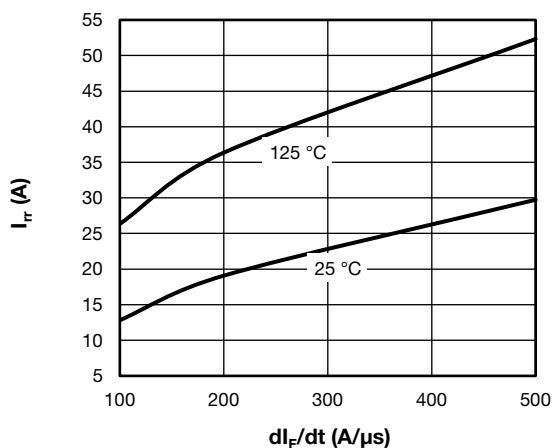

Fig. 4 - Maximum Thermal Impedance $R_{\theta JC}$ Characteristics


Fig. 5 - Forward Power Loss Characteristics


Fig. 6 - Typical Reverse Recovery Time vs. di_F/dt


Fig. 7 - Typical Reverse Recovery Charge vs. dI_F/dt

Fig. 8 - Typical Reverse Recovery Current vs. dI_F/dt

ORDERING INFORMATION TABLE

Device code

VS-VS	KE	U	300	/	12	PbF
①	②	③	④		⑤	⑥

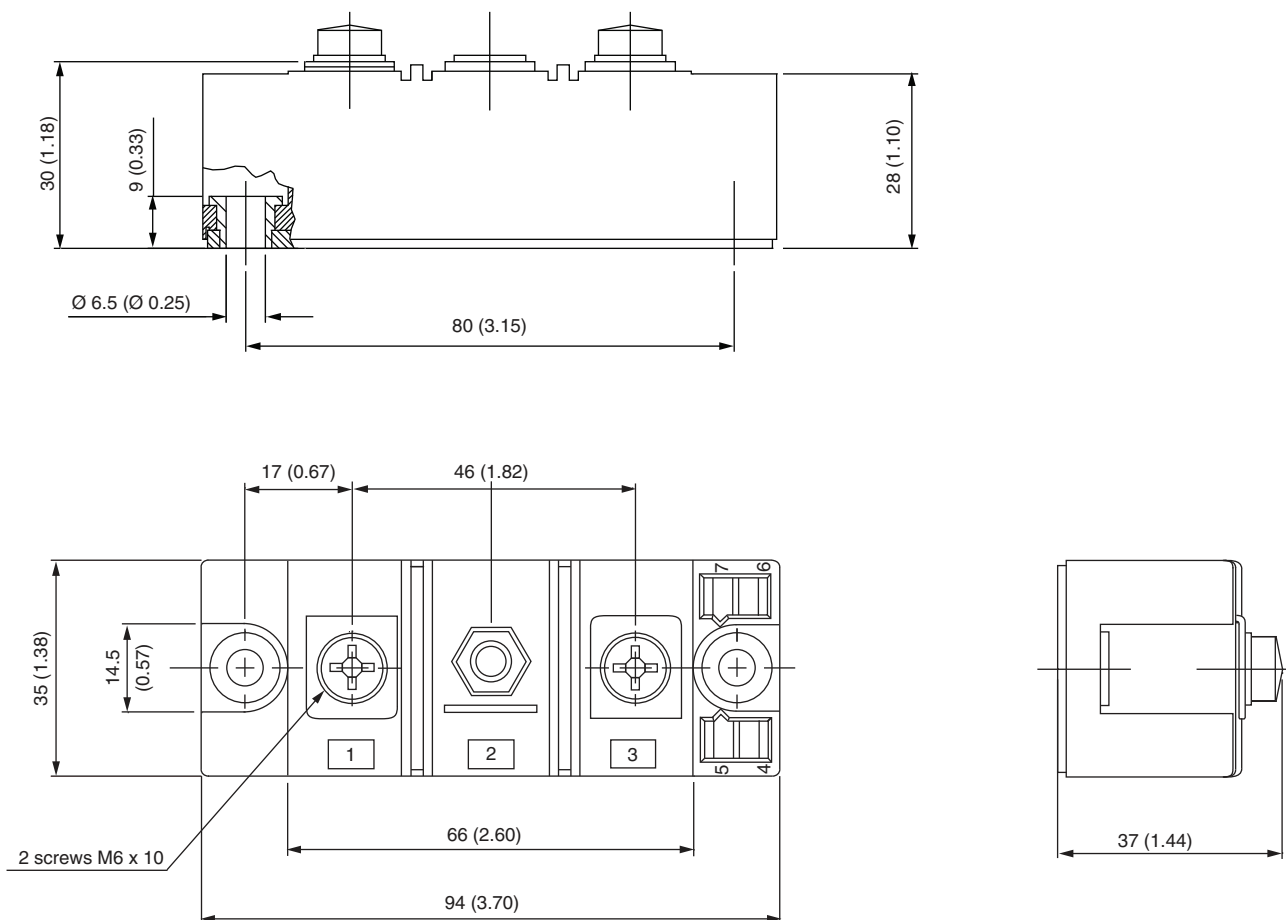
- 1** - Vishay Semiconductors product
- 2** - KE = circuit configuration
- 3** - U = ultrafast diode
- 4** - Current rating 300 = 300 A
- 5** - Voltage rating (12 = 1200 V)
- 6** - PbF = lead (Pb)-free

CIRCUIT CONFIGURATION





DIMENSIONS in (inches) millimeters **INT-A-PAK DBC**





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