



# THE DATASHEET OF HFA16TA60CSTRR





ELECTRICAL SPECIFICATIONS PER LEG (T <sub>J</sub> = 25 °C unless otherwise specified)						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Cathode to anode breakdown voltage	V <sub>BR</sub>	I <sub>R</sub> = 100 μA	600	-	-	V
Maximum forward voltage	V <sub>FM</sub>	I <sub>F</sub> = 8.0 A	-	1.4	1.7	
		I <sub>F</sub> = 16 A	-	1.7	2.1	
		I <sub>F</sub> = 8.0 A, T <sub>J</sub> = 125 °C	-	1.4	1.7	
Maximum reverse leakage current	I <sub>RM</sub>	V <sub>R</sub> = V <sub>R</sub> rated	-	0.3	5.0	μA
		T <sub>J</sub> = 125 °C, V <sub>R</sub> = 0.8 x V <sub>R</sub> rated	-	100	500	
Junction capacitance	C <sub>T</sub>	V <sub>R</sub> = 200 V	-	10	25	pF
Series inductance	L <sub>S</sub>	Measured lead to lead 5 mm from package body	-	8.0	-	nH

DYNAMIC RECOVERY CHARACTERISTICS PER LEG (T <sub>J</sub> = 25 °C unless otherwise specified)						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Reverse recovery time See fig. 5, 6 and 16	t <sub>rr</sub>	I <sub>F</sub> = 1.0 A, dI <sub>F</sub> /dt = 200 A/μs, V <sub>R</sub> = 30 V	-	18	-	ns
	t <sub>rr1</sub>	T <sub>J</sub> = 25 °C	-	37	55	
	t <sub>rr2</sub>	T <sub>J</sub> = 125 °C	-	55	90	
Peak recovery current See fig. 7 and 8	I <sub>RRM1</sub>	T <sub>J</sub> = 25 °C	-	3.5	5.0	A
	I <sub>RRM2</sub>	T <sub>J</sub> = 125 °C	-	4.5	8.0	
Reverse recovery charge See fig. 9 and 10	Q <sub>rr1</sub>	T <sub>J</sub> = 25 °C	-	65	138	nC
	Q <sub>rr2</sub>	T <sub>J</sub> = 125 °C	-	124	360	
Peak rate of fall of recovery current during t <sub>b</sub> See fig. 11 & 12	dI <sub>(rec)M</sub> /dt1	T <sub>J</sub> = 25 °C	-	240	-	A/μs
	dI <sub>(rec)M</sub> /dt2	T <sub>J</sub> = 125 °C	-	210	-	

THERMAL - MECHANICAL SPECIFICATIONS						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Lead temperature	T <sub>lead</sub>	0.063" from case (1.6 mm) for 10 s	-	-	300	°C
Junction to case, single leg conducting	R <sub>thJC</sub>		-	-	3.5	K/W
Junction to case, both legs conducting			-	-	1.75	
Thermal resistance, junction to ambient	R <sub>thJA</sub>	Typical socket mount	-	-	80	
Weight			-	2	-	g
			-	0.07	-	oz.
Mounting torque			6.0 (5.0)	-	12 (10)	kgf · cm (lbf · in)
Marking device		Case style D <sup>2</sup> PAK	HFA16TA60CS			

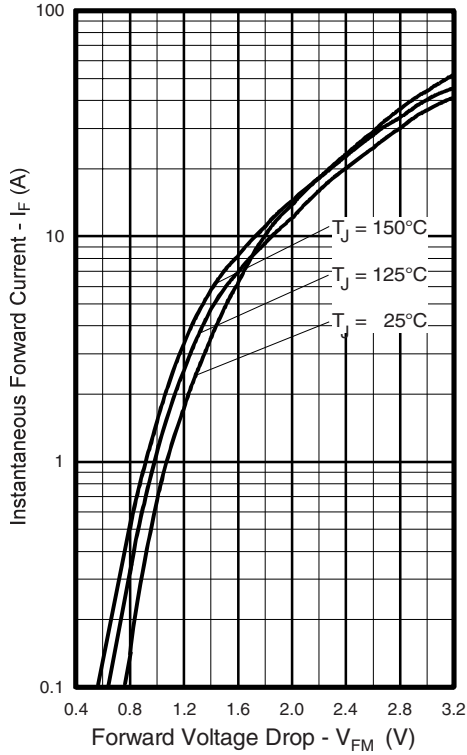


Fig. 1 - Maximum Forward Voltage Drop vs. Instantaneous Forward Current (Per Leg)

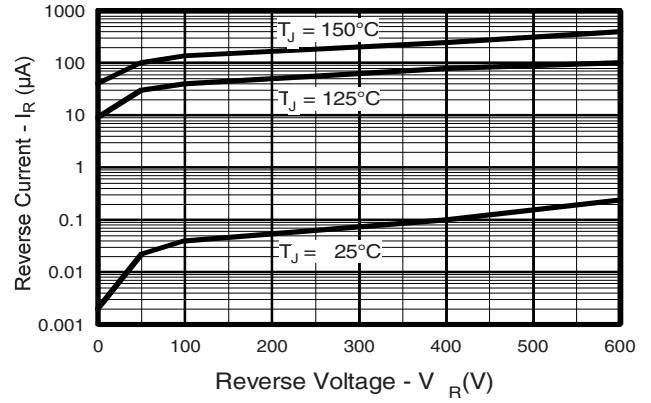


Fig. 2 - Typical Reverse Current vs. Reverse Voltage (Per Leg)

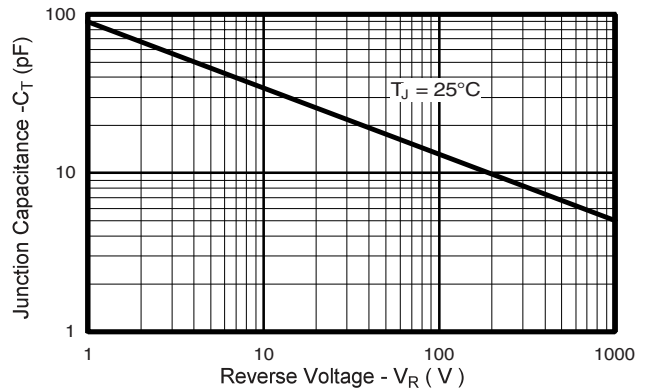


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

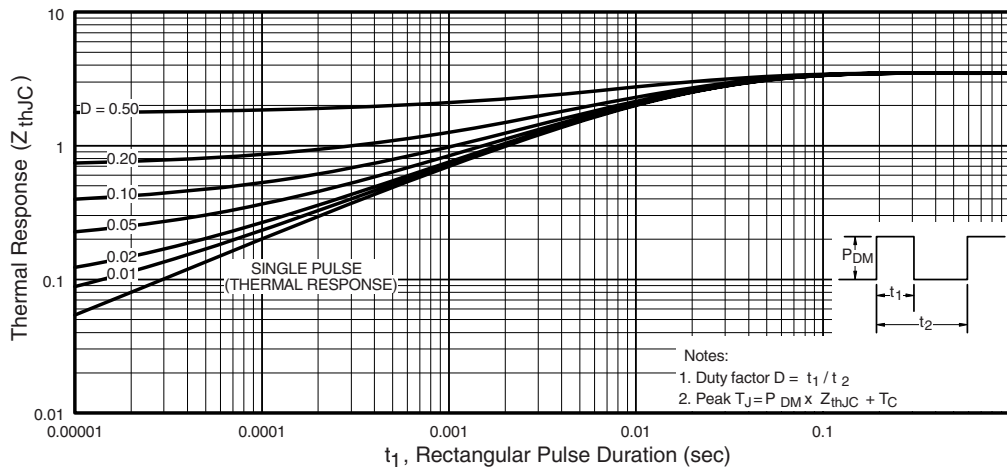


Fig. 4 - Maximum Thermal Impedance  $Z_{thJC}$  Characteristics (Per Leg)

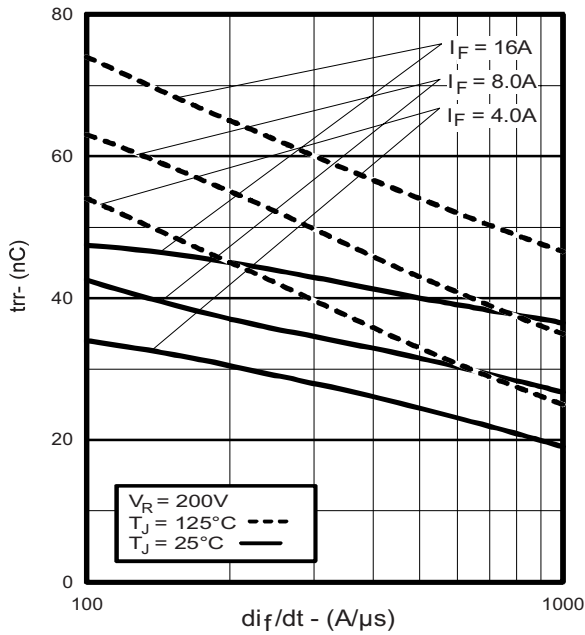


Fig. 5 - Typical Reverse Recovery Time vs.  $di_F/dt$  (Per Leg)

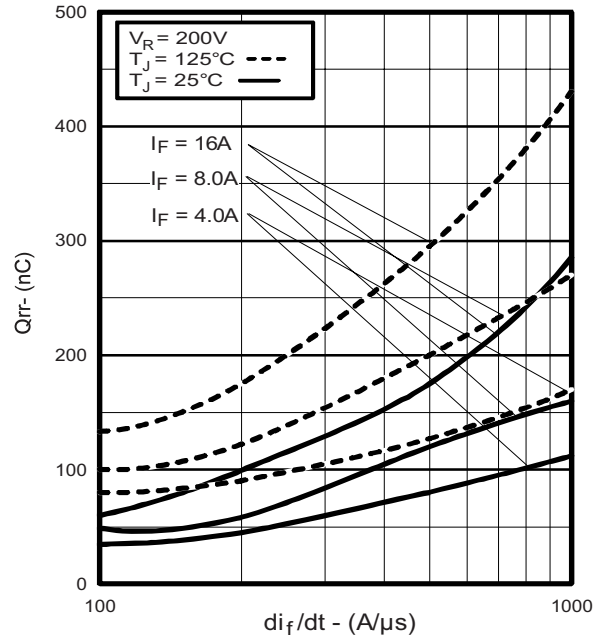


Fig. 7 - Typical Stored Charge vs.  $di_F/dt$  (Per Leg)

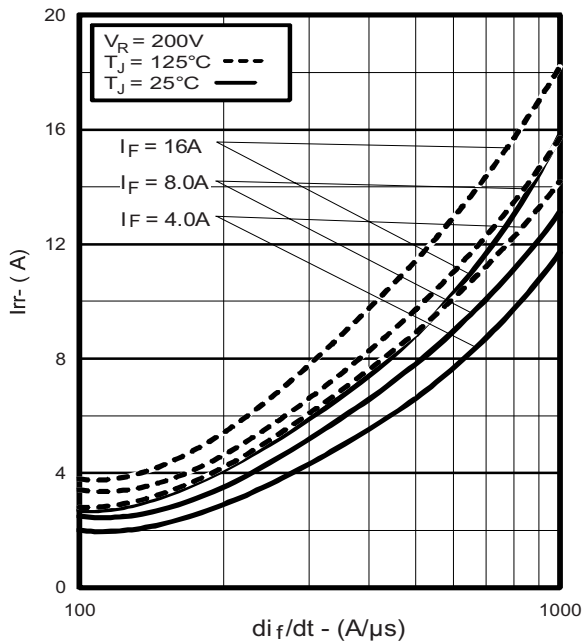


Fig. 6 - Typical Recovery Current vs.  $di_F/dt$  (Per Leg)

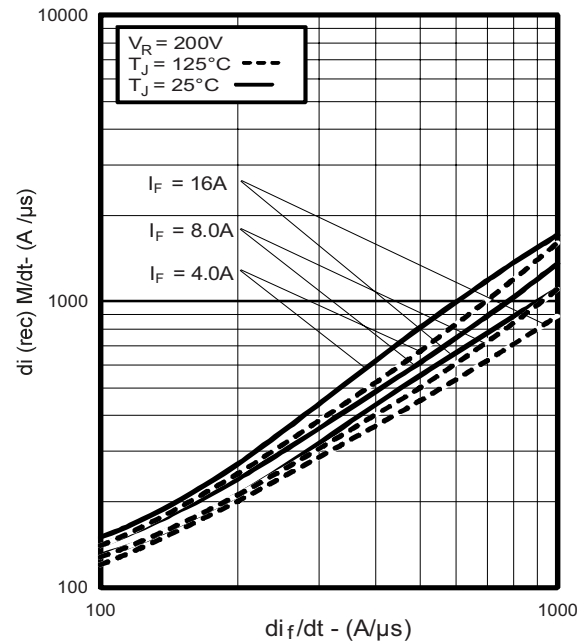


Fig. 8 - Typical  $di_{(rec)M}/dt$  vs.  $di_F/dt$  (Per Leg)

**HEXFRED®**  
 Ultrafast Soft Recovery Diode, 2 x 8 A

Vishay High Power Products

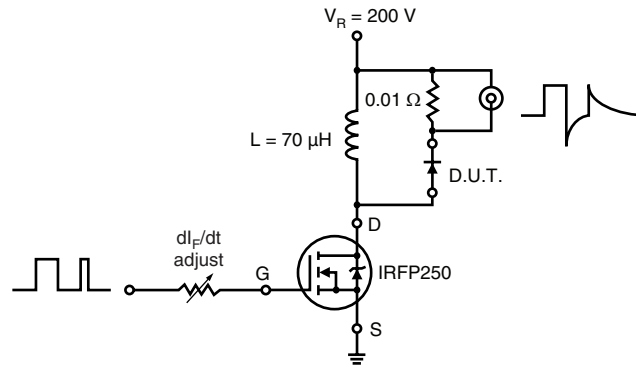
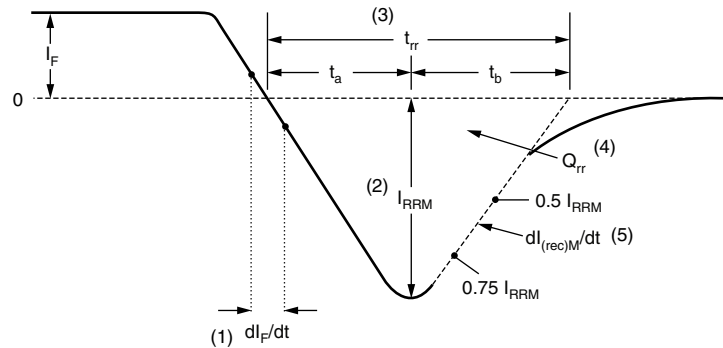


Fig. 9 - Reverse Recovery Parameter Test Circuit


 (1)  $di_F/dt$  - rate of change of current through zero crossing

 (2)  $I_{RRM}$  - peak reverse recovery current

 (3)  $t_{rr}$  - reverse recovery time measured from zero crossing point of negative going  $I_F$  to point where a line passing through  $0.75 I_{RRM}$  and  $0.50 I_{RRM}$  extrapolated to zero current.

 (4)  $Q_{rr}$  - area under curve defined by  $t_{rr}$  and  $I_{RRM}$ 

$$Q_{rr} = \frac{t_{rr} \times I_{RRM}}{2}$$

 (5)  $di_{(rec)M}/dt$  - peak rate of change of current during  $t_b$  portion of  $t_{rr}$ 

Fig. 10 - Reverse Recovery Waveform and Definitions

**LINKS TO RELATED DOCUMENTS**

Dimensions	<a href="http://www.vishay.com/doc?95046">http://www.vishay.com/doc?95046</a>
Part marking information	<a href="http://www.vishay.com/doc?95054">http://www.vishay.com/doc?95054</a>
Packaging information	<a href="http://www.vishay.com/doc?95032">http://www.vishay.com/doc?95032</a>



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