

Features

- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix Designates Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Low Switching Losses and High Efficiency
- Low Reverse Leakage
- Ultrafast Recovery Time
- Planar Structure Die and Soft Recovery Characteristics

Maximum Ratings @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	600	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	V_{RMS}	420	V
Average Rectified Forward Current	$I_{F(AV)}$	10	A
Non-Repetitive Peak Surge Current @8.3ms Half Sine Wave	I_{FSM}	120	A
Current Squared Time @ $1ms \leq t \leq 8.3ms$	I^2t	59.76	A ² s

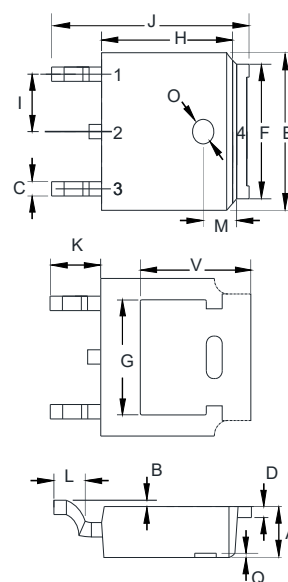
Internal Structure

Pin	Description	Simplified Outline	Graphic Symbol
1	N/C		
2&4	Cathode		
3	Anode		

Note :1. High Temperature Solder Exemption Applied, See EU Directive Annex 7a.

10 Amp FRED Rectifiers 600 Volts

DPAK(TO-252)



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.211		5.35		

Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
T_J	Operating Junction Temperature Range		-55		175	°C
T_{stg}	Storage Temperature Range		-55		175	°C
$R_{th(J-C)}$	Thermal Resistance from Junction to Case			3		°C/W
$R_{th(J-A)}$	Thermal Resistance from Junction to Ambient			40		°C/W

Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F=10A; T_J=25^\circ C$		1.40	1.60	V
		$I_F=10A; T_J=150^\circ C$		1.18	1.30	
Reverse Current	I_R	$V_R=600V; T_J=25^\circ C$			5	uA
		$V_R=600V; T_J=150^\circ C$			200	
Junction Capacitance	C_J	$V_R=4V; f=1MHz; T_J=25^\circ C$		45		pF

Dynamic Recovery Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Reverse Recovery Time	t_{rr}	$I_F=0.5A; I_R=1.0A; I_{RR}=0.25A; T_J=25^\circ C$		20	35	ns	
			$T_J=25^\circ C$		102		
			$T_J=150^\circ C$		152		
Peak Recovery Current	I_{RRM}	$I_F=10A$ $d_{IF}/d_t=-200A/\mu s$ $V_{RM}=400V$	$T_J=25^\circ C$		3.52	A	
			$T_J=150^\circ C$		8.18		
Reverse Recovery Charge	Q_{rr}		$T_J=25^\circ C$		180	nC	
			$T_J=150^\circ C$		623		

Curve Characteristics

Fig. 1 - Forward Current Derating Curve

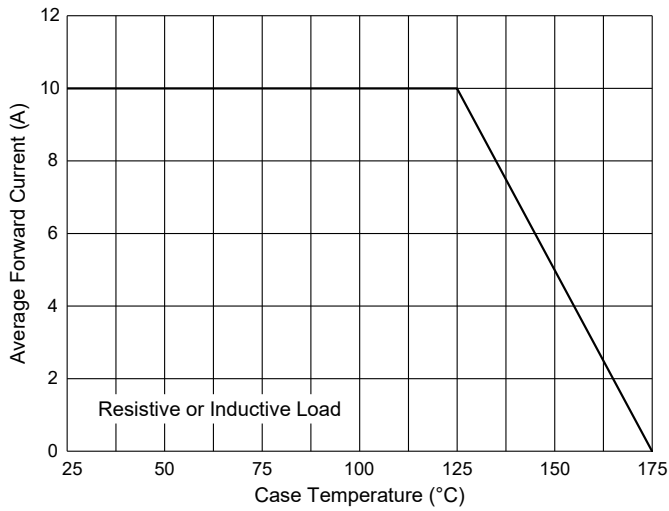


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

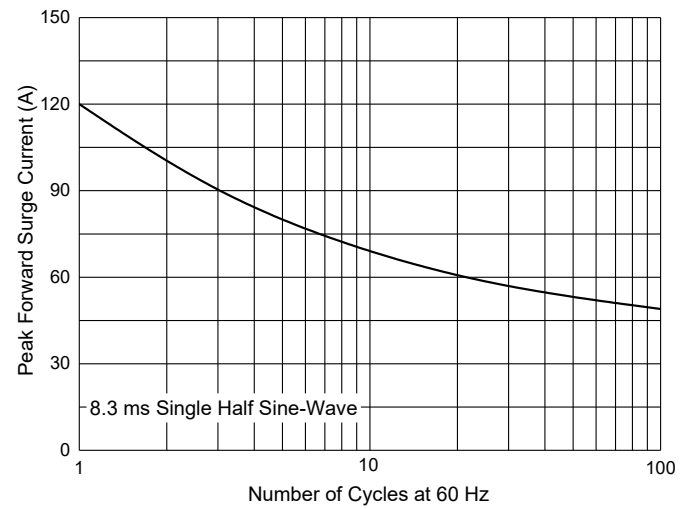


Fig. 3 - Typical Forward Characteristics

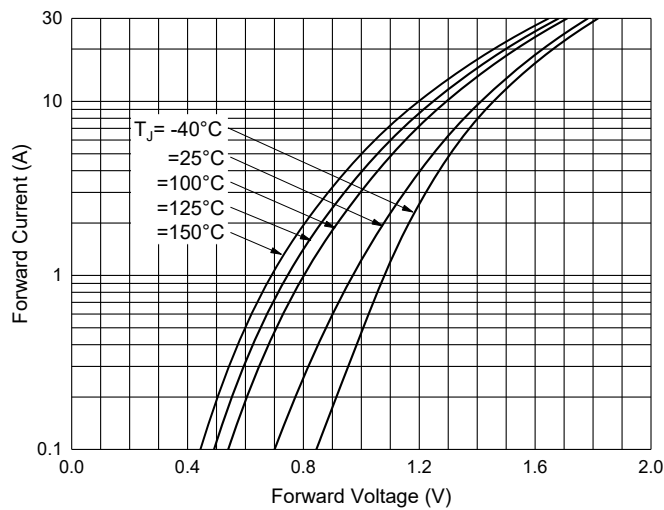


Fig. 4 - Typical Reverse Leakage Characteristics

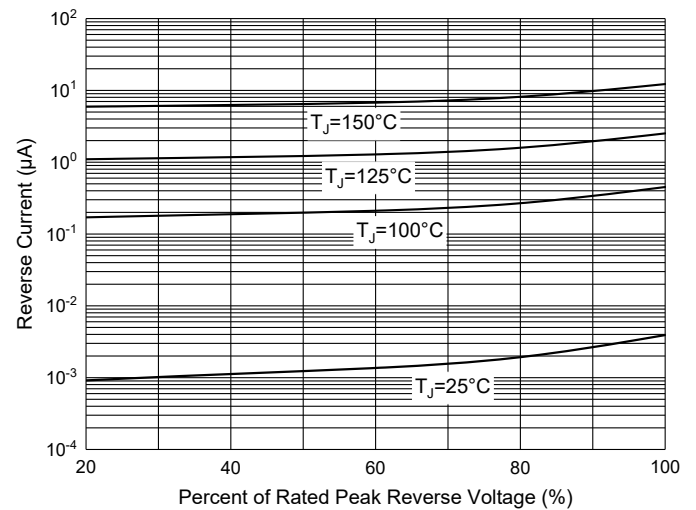


Fig. 5 - Typical Capacitance Characteristics

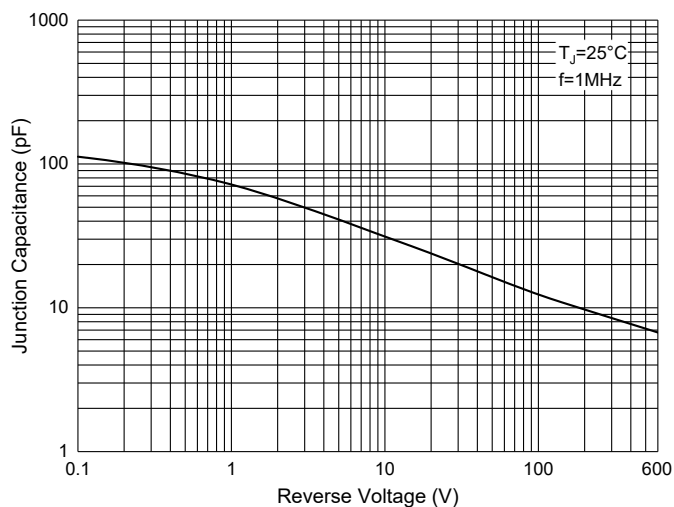
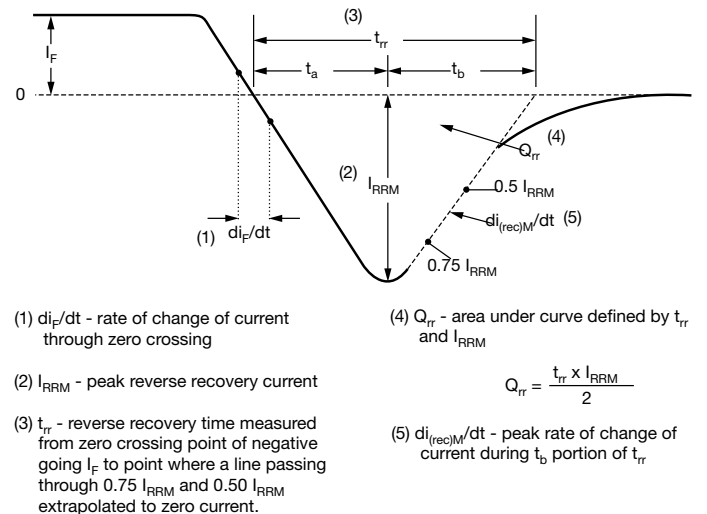


Fig. 6 - Reverse Recovery Waveform and Definitions



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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