

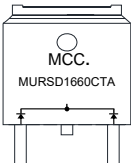
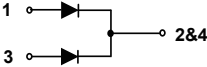
## Features

- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant(Note 2) ("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	$I_{F(AV)}$	8	A
Per Diode			
Per Device		16	
Non-Repetitive Peak Surge Current @8.3ms Half Sine Wave	$I_{FSM}$	100	A
Current Squared Time @ 1ms≤t≤8.3ms	$I^2t$	41	A <sup>2</sup> s

## Internal Structure

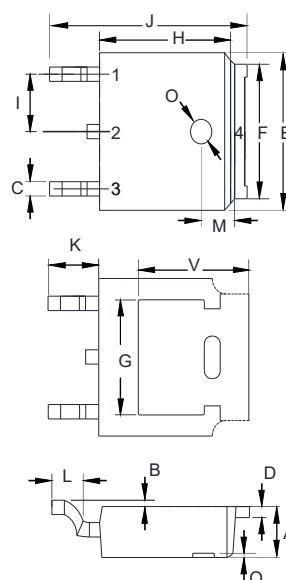
Pin	Description	Simplified Outline	Graphic Symbol
2&4	Cathode		
1&3	Anode		

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. High temperature solder exemption applied, see EU directive annex 7a.

# 16 Amp FRED Rectifiers 600 Volts

## DPAK(TO-252)



DIM	INCHES		MM		NOTE
	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	$V_F$	$I_F=8A; T_J=25^{\circ}C$		1.40	1.60	V
		$I_F=8A; T_J=150^{\circ}C$		1.20	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	$C_J$	$V_R=4V; f=1MHz; T_J=25^{\circ}C$		35		pF

## Dynamic Recovery Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =0.5A; I <sub>R</sub> =1.0A; I <sub>RR</sub> =0.25A; T <sub>J</sub> =25°C			20	35	ns
		I <sub>F</sub> =8A d <sub>iF</sub> /d <sub>t</sub> =-200A/μs V <sub>RM</sub> =400V	T <sub>J</sub> =25°C		82		
			T <sub>J</sub> =150°C		125		
Peak Recovery Current	I <sub>R</sub> RM		T <sub>J</sub> =25°C	3.45		A	
			T <sub>J</sub> =150°C	6.65			
Reverse Recovery Charge	Q <sub>rr</sub>		T <sub>J</sub> =25°C	140		nC	
			T <sub>J</sub> =150°C	420			

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

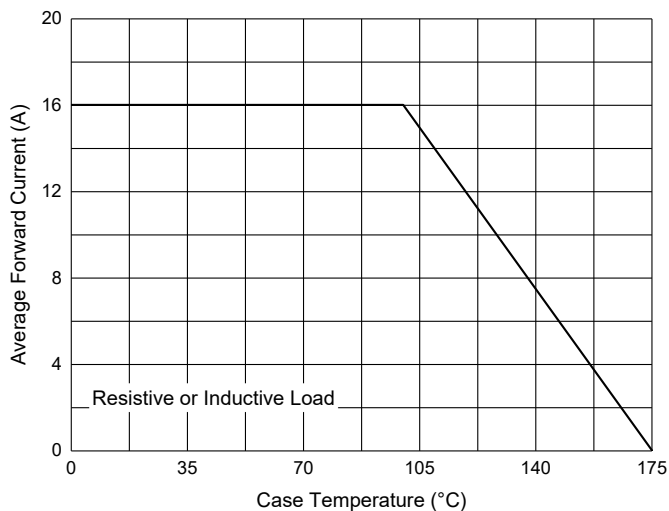


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

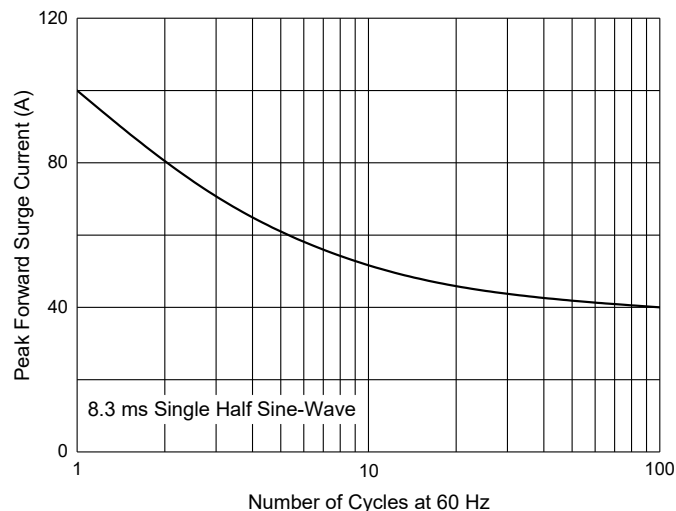


Fig. 3 - Typical Forward Characteristics

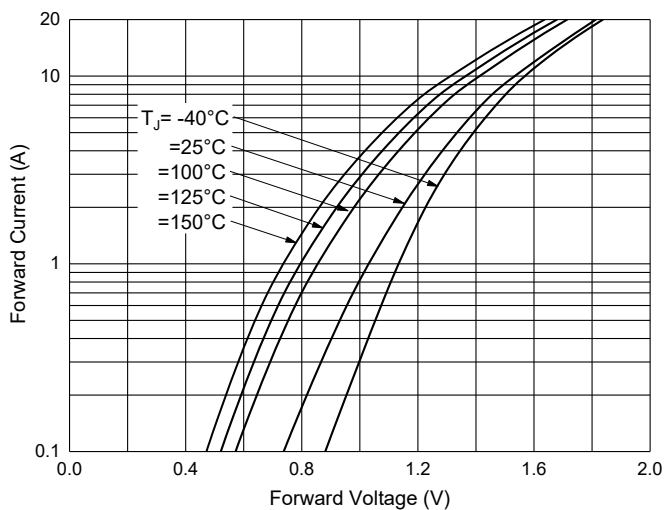


Fig. 4 - Typical Reverse Leakage Characteristics

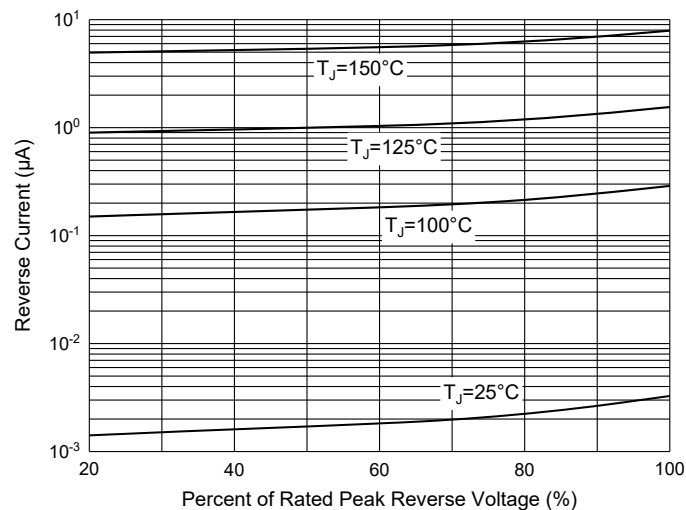


Fig. 5 - Typical Capacitance Characteristics

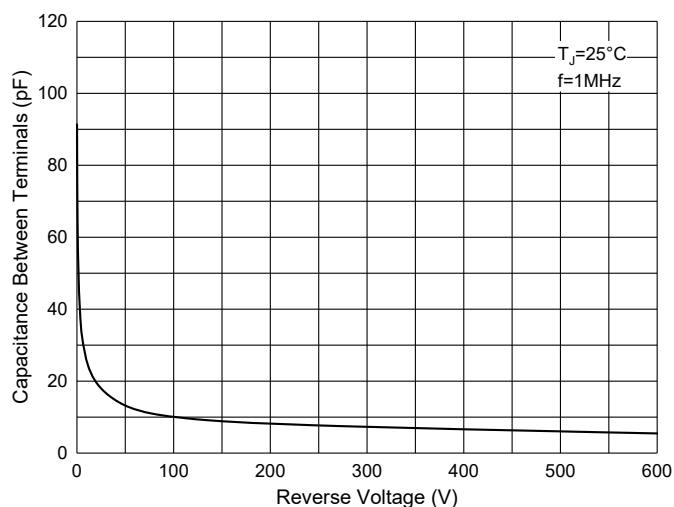
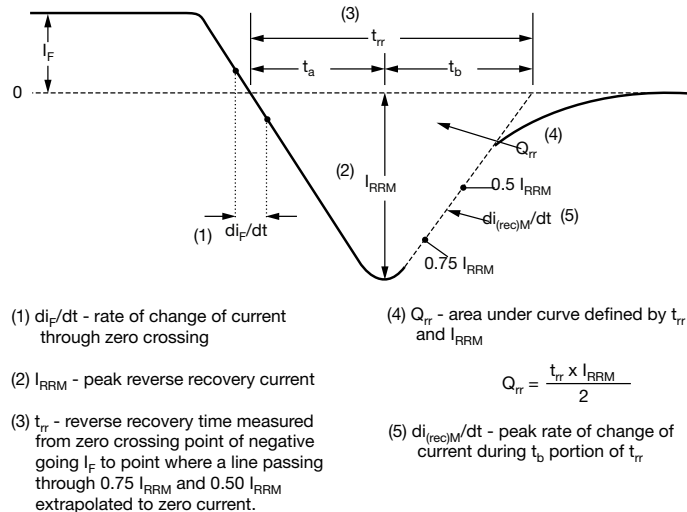


Fig. 6 - Reverse Recovery Waveform and Definitions



## Ordering Information

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

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