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Vishay General Semiconductor

Dual Common Cathode Schottky Rectifier



TO-262AA
K
123
'
MI20xxC
PIN 1 OPIN 2
PIN 3 O CASE

PRIMARY CHARACTERISTICS					
I _{F(AV)}	2 x 10 A				
V_{RRM}	50 V, 60 V				
I _{FSM}	150 A				
V_F at $I_F = 10 A$	0.570 V				
T _J max.	150 °C				
Package	TO-262AA				
Diode variations	Common cathode				

FEATURES

- Power pack
- · Guardring for overvoltage protection
- · Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- · Material categorization: For definitions of compliance please see www.vishav.com/doc?99912

TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, OR-ing diodes, DC/DC converters, or polarity protection application.

MECHANICAL DATA

Case: TO-262AA

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PARAMETER		SYMBOL	MI2050C	MI2060C	UNIT	
Maximum repetitive peak reverse voltage		V_{RRM}	50	60	V	
Maximum average forward rectified current (fig.1)	total device		2	20		
	per diode	I _{F(AV)}	1	0	A	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I _{FSM}	150		А	
Peak repetitive reverse current per leg at t _p = 2 μs, 1 kHz per diode		I _{RRM}	0.5		Α	
Voltage rate of change (rated V _R)		dV/dt	10 000		V/µs	
Operating junction temperature range		TJ	- 65 to	o +150	°C	
Storage temperature range		T _{STG}	- 65 to	o +175	°C	



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	TEST CONDITIONS		TYP.	MAX.	UNIT	
	V _F ⁽¹⁾	I _F = 5 A	T _J = 25 °C	0.554	-	V	
Maximum instantaneous forward voltage		I _F = 10 A	T _J = 125 °C	0.649	0.74		
per diode		I _F = 5 A	T _J = 25 °C	0.484	-		
		I _F = 10 A	T _J = 125 °C	0.570	0.62		
Reverse current per diode	I _R ⁽²⁾	rated V _R	T _J = 25 °C	15	150	μA	
			T _J = 100 °C	10.8	25	mA	
Typical junction capacitance	CJ	4.0 V, 1 MHz		300	-	pF	

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	MI2050C MI2060C		UNIT		
Typical thermal resistance per diode	$R_{\theta JC}$	2.	°C/W			

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-262AA	MI2060C-E3/4W	1.456	4W	50/tube	Tube		

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

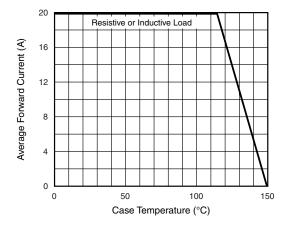


Fig. 1 - Forward Current Derating Curve

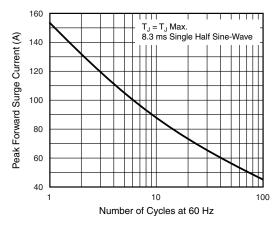


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge pCurrent Per Diode



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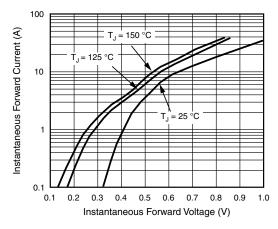


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

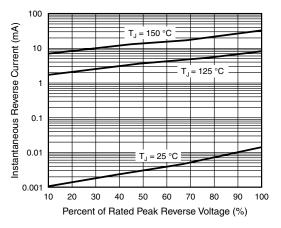


Fig. 4 - Typical Reverse Characteristics Per Diode

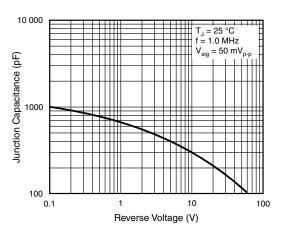


Fig. 5 - Typical Junction Capacitance Per Diode

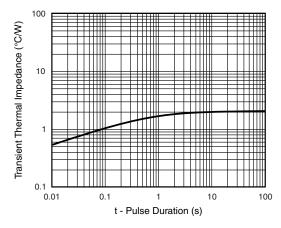


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-262AA 0.411 (10.45) MAX. 0.185 (4.70) 0.175 (4.44) 0.250 (6.35) MIN. 0.055 (1.40) 0.055 (1.40) 30° (TYP.) 0.047 (1.19) (REF.) 0.045 (1.14) 0.350 (8.89) 0.401 (10.19) 0.381 (9.68) 0.950 (24.13) 0.510 (12.95) 0.330 (8.38) 0.920 (23.37) PIN 0.470 (11.94) 0.160 (4.06) 0.110 (2.79) 0.140 (3.56) 0.100 (2.54) 0.057 (1.45) 0.560 (14.22) 0.045 (1.14) 0.530 (13.46) 0.035 (0.90) 0.028 (0.70) 0.022 (0.56) 0.104 (2.65) 0.014 (0.35) 0.096 (2.45) 0.205 (5.20) 0.195 (4.95)

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