SILICON CARBIDE SCHOTTKY DIODE

Description:

SiC Schottky Diode has no switching loss, provides improved system efficiency against Si diodes by utilizing new semiconductor material–Silicon Carbide, enables higher operating frequency, and helps increasing power density and reduction of system size /cost. Its high reliability ensures robust operation during surge or over_voltage conditions.

IATF16949认证

AEC-Q101 Qualified

Features:

- Max Junction Temperature 175° C
- High Surge Current Capacity
- Positive Temperature Coefficient
- Ease of Paralleling
- No Reverse Recovery/No Forward Recovery
- AEC-Q101 qualified and PPAP capable

TO-252

KJSC1065M2-V

Mechanical Data:

- Case: JEDEC TO-252
- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked

Applications:

- General Purpose
- SMPS, Solar inverter, UPS
- Power Switching Circuits

KEY PERFORMANCE AND PACKAGE PARAMETERS

Type	V_{DC}	I_F	Qc	T_j,max	Package
KJSC1065M2-V	650V	10A	25nC	175℃	TO- 252

RATINGS AND CHARACTERISTIC OF KJSC1065M2-V

MAXIMUM RATINGS

(Ratings at 25° C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	650	V
Continuous Forward Current for $Rth_{(j-c)}$	I_F	10（Tc≤135℃ TO-252)	A
Non-Repetitive Forward Surge Current （Half-Sine Pulse,tp=8.3mS)	$I_{F,SM}$	85(25℃) 75(150℃)	A
I^2t value	$\int i^2t$	30（25℃） 23（150℃）	A^2S
Diode dv/dt ruggedness(VR=0...650V)	dv/dt	80	V/nS
Power dissipation for $R_{th(j-c,max)}$ （Tc=25℃）	P_{tot}	60	W
Operating junction temperature range	Tj	－55. ..175	℃
Storage temperature range	Tstg	-55...175	℃

THERMAL CHARACTERISTCS（TA=25℃ Unless otherwise noted）

Paramerter	Symbol	TO-252	Unit
Diode thermal resistance junction-case	$R_{th(j-c)}$	2.5	K/W

RATINGS AND CHARACTERISTIC OF KJSC1065M2-V

ELECTRICAL CHARACTERISTCS（T_A=25°C Unless otherwise noted）

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
DC blocking voltage	V_{DC}	Tj=25...175℃	650			V
Diode forward voltage	V_F	IF= 10A Tj=25℃ IF=10A Tj=125℃ IF=10A Tj=175℃		1.5 1.6 1.8	1.8 1.9 2.1	V
Reverse current	I_R	VR=650V Tj=25℃ VR=650V Tj=125℃ VR=650V Tj=175℃			20 100 200	uA

DYNAMIC CHARACTERISTICS(at Tj= 25℃,unless otherwise specified)

Parameter	Symbol	conditions	Value			Unit
			min	typ	max	
Total capacitive charge	Qc	VR=650V,IF=10A di/dt=200A/uS Tj=25℃		25		nC
Total capacitance	C	V_R =0V,f=1MHz V_R =200V,f=1MHz V_R =400V,f=1MHz Tj=25℃		440 57 46		pF

RATINGS AND CHARACTERISTIC OF KJSC1065M2-V

FIG.1-FORWARD CURRENT DERATING CURVE

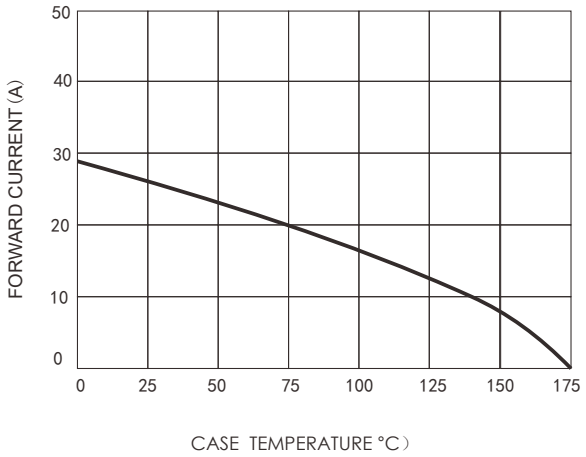


FIG.2-TYPICAL JUNCTION CAPACITANCE

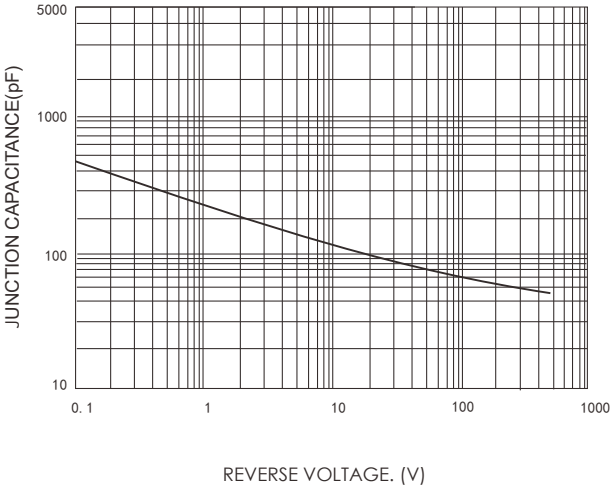


FIG.3-FORWARD CHARACTERISTICS

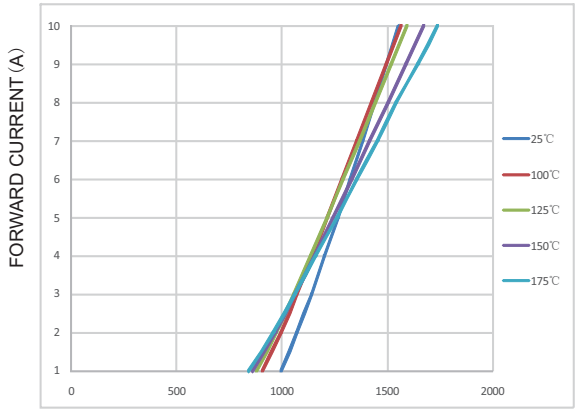
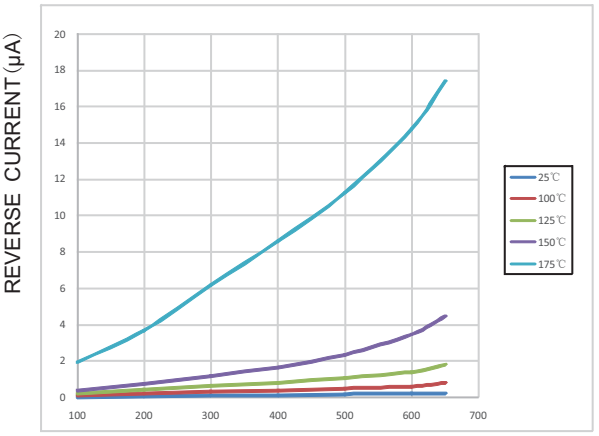
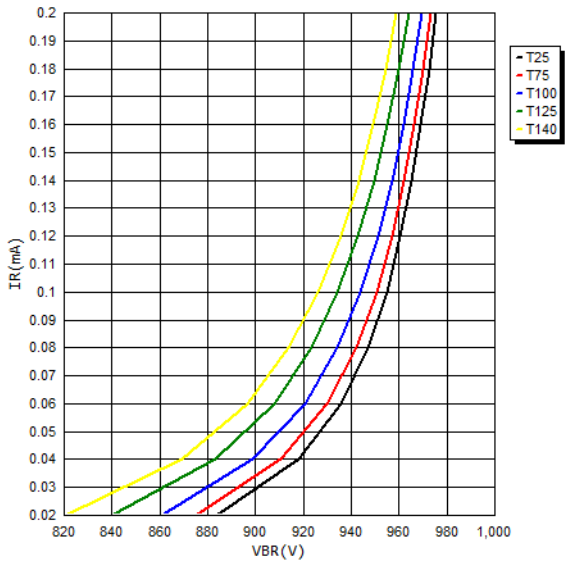


FIG.4-REVERSE CHARACTERISTICS (IR:0-20uA)



RATINGS AND CHARACTERISTIC OF KJSC1065M2-V

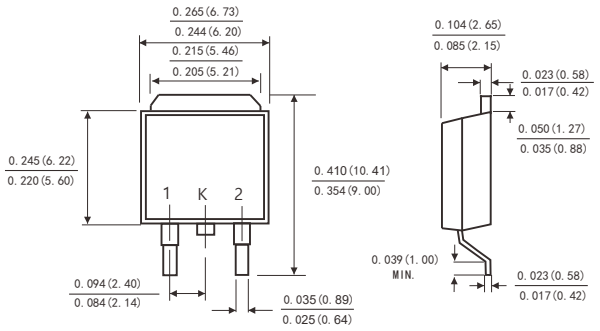
FIG.5-REVERSE CHARACTERISTICS (IR:0.02-0.2mA)



PACKAGE OUTLINE DIMENSIONS

Dimensions in inches and (millimeters)

TO-252



Suggested Pad Layout

(TO-252)