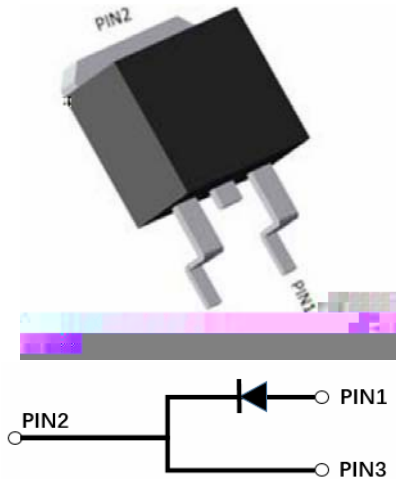


Silicon Carbide Schottky Diode

V_{RRM}	650V
I_F (135°C)	22A
Q_C	62nC



Features

- Positive temperature coefficient
- Temperature-independent switching
- Maximum working temperature at 175 °C
- Unipolar devices and zero reverse recovery current
- Zero forward recovery current
- Essentially no switching losses
- Reduction of heat sink requirements
- High-frequency operation
- Reduction of EMI

Typical Applications

Typical applications are in power factor correction(PFC), solar inverter, uninterruptible power supply, motor drives, photovoltaic inverter, electric car and charger.

Mechanical Data

Package: TO-263

Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free

Terminals: Tin plated leads

Polarity: As marked

Maximum Ratings ($T_c=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Device marking code			D106520BQG2
Reverse voltage (repetitive peak) @ $T_j=25^\circ\text{C}$	V_{RRM}	V	650
Reverse voltage (Surge Peak) @ $T_j=25^\circ\text{C}$	V_{RSM}	V	650
Reverse voltage (DC) @ $T_j=25^\circ\text{C}$	V_{DC}	V	650
Continuous forward current @ $T_c=25^\circ\text{C}$	I_F	A	48
Continuous forward current @ $T_c=135^\circ\text{C}$			22
Continuous forward current @ $T_c=140^\circ\text{C}$			20
Non-repetitive peak forward surge current @ $T_c=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Wave	I_{FSM}	A	160
Power Dissipation @ $T_c=25^\circ\text{C}$	P_{TOT}	W	144
Power Dissipation @ $T_c=110^\circ\text{C}$			62
i^2t Value @ $T_c=25^\circ\text{C}$, $t_p=10\text{ms}$	i^2t	A^2S	128
Operating junction and Storage temperature range	T_j, T_{stg}	$^\circ\text{C}$	-55 to +175



YJD106520BQG2

Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V_F	V	$I_F=20A, T_J=25^\circ C$	1.35	1.55
			$I_F=20A, T_J=175^\circ C$	1.75	-
Reverse leakage current	I_R	μA	$V_R=650V, T_J=25^\circ C$	1	25
			$V_R=650V, T_J=175^\circ C$	5	-
Total capacitive charge	Q_C	nC	$V_R=400V, T_J=25^\circ C, Q_C=\int_0^{V_R} I_C(V)dV$	62	-
Total capacitance	C	μF	$V_R=0V, f=1MHZ$	1157	-
			$V_R=200V, f=1MHZ$	115.6	-
			$V_R=400V, f=1MHZ$	107	-
Capacitance Stored Energy	E_C	μJ	$V_R=400V$	7.8	-

Thermal Characteristics ($T_a=25^\circ C$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	R_{J-C}	$^\circ C/W$	1.04

Typical Characteristics

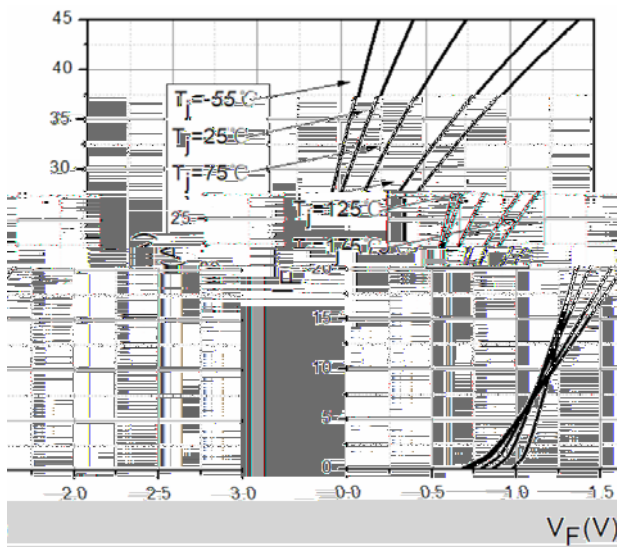


Figure 1. Forward Characteristics

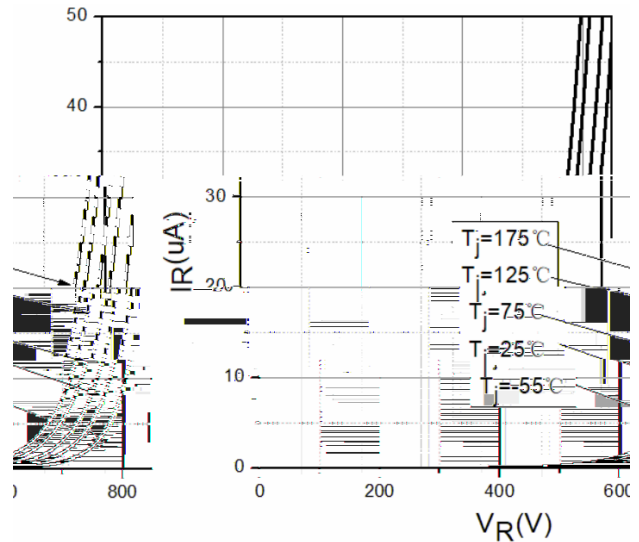


Figure 2. Reverse Characteristic







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