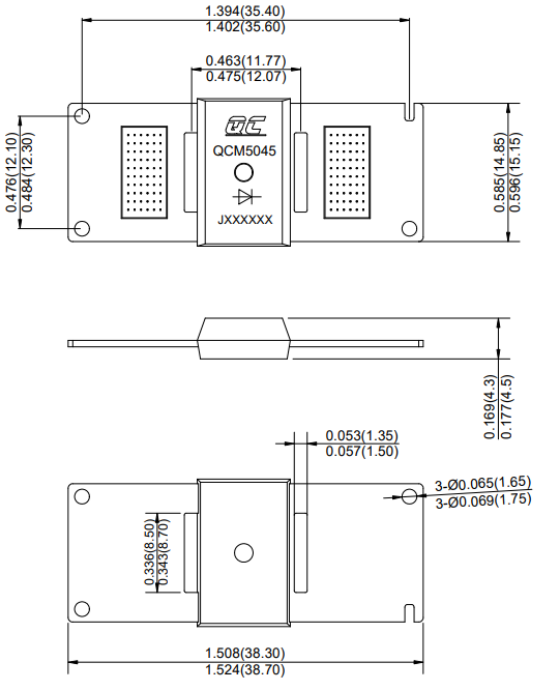
QC3Q



Dimensions in inch(mm)

Reverse Voltage 45V
Forward Current 50Amp

Features

- Metal of silicon rectifier, majority carrier conduction
- Guardring for overvoltage protection
- Low power loss, high efficiency
- High surge current capability
- High temperature reverse characteristic is excellent
- Trench Schottky Technology

Mechanical Data

Case: QC3Q，Molded plastic body
Molding compound meets UL 94V-0 flammability rating
Terminal: Matte tin plated leads, solderable per JESD22-B102
Polarity: As marked on body
Weight: 4.9grams (approximately)

Typical Applications

- Photovoltaic solar cell protection
- Switching power supplies, converters, freewheeling diodes, and reverse battery protection

Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise specified)(Note1)

Symbol	Parameter&Test Conditions	Value	Units
V_{RRM}	Maximum Repetitive Peak Reverse Voltage	45	V
V_{RMS}	Maximum RMS Voltage	31.5	V
V_{DC}	Maximum DC Blocking Voltage	45	V
I_F(AV)	Maximum Average Forward Rectified Current @25°C	50	A
I_{FSM}	Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rated Load	400	A
$R_{\theta JC}$	Maximum Thermal Resistance, Junction To Case	1.0	°C /W
T_j	Operating Junction Temperature(Note2)	-55 to +200	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Test Conditions	Value	Units
V_{FM}	Maximum Instantaneous Forward Voltage(Note3) I_F=50A, T_J=25°C	0.53	V
I_R	Maximum DC reverse current at rated DC blocking voltage T_A = 25°C , T_A = 100°C	0.2	mA
		30	mA

Note 1: Single phase, half wave, 60 Hz, resistive or inductive load.For capacitive load, derate current by 20%.
Note 2: Junction Temperature In DC forward current without reverse bias,t ⩽ 1 h (Fig.1). Meets the Requirements of IEC 61215 Ed. 2 bypass diode thermal test.
Note 3: Pulse test with PW=300μs, 2% duty cycle.

Typical Performance Characteristics

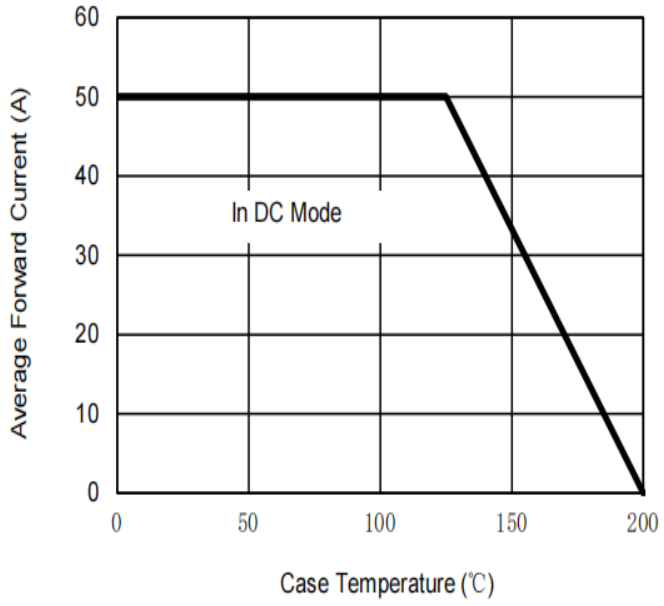


FIG. 1-FORWORD CURRENT DERATING CURVE

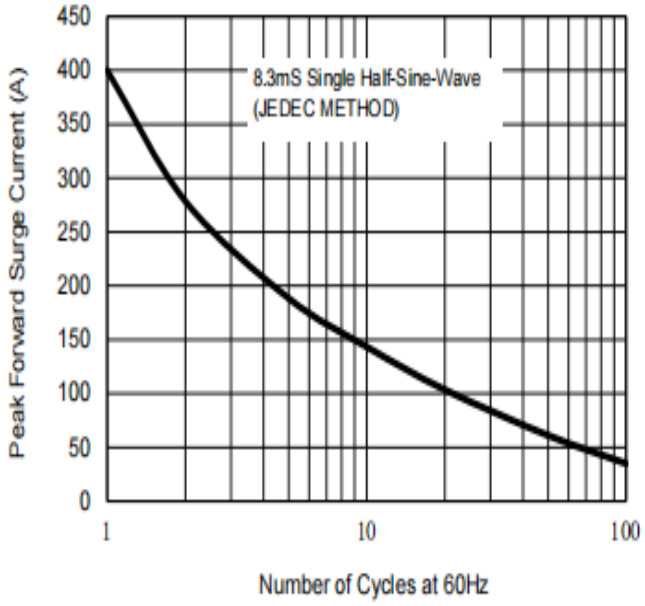


FIG. 2- MAXIMUM NON-REPETIVE SURGE

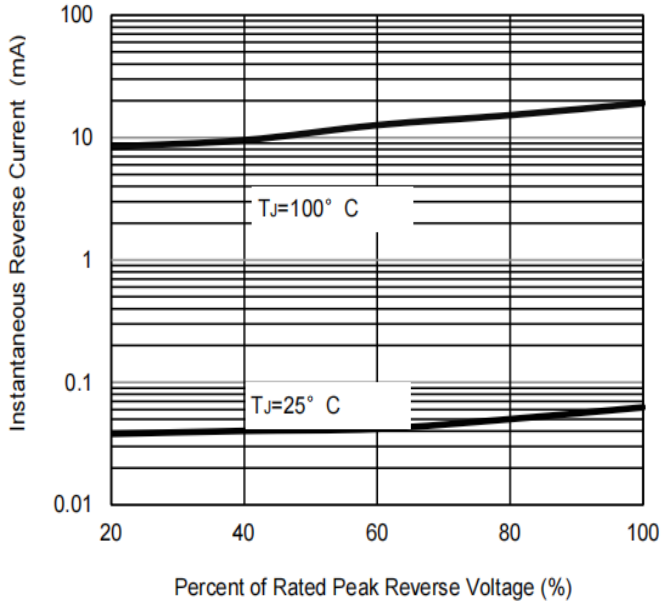


FIG. 3-TYPICAL REVERSE CHARACTERISTICS

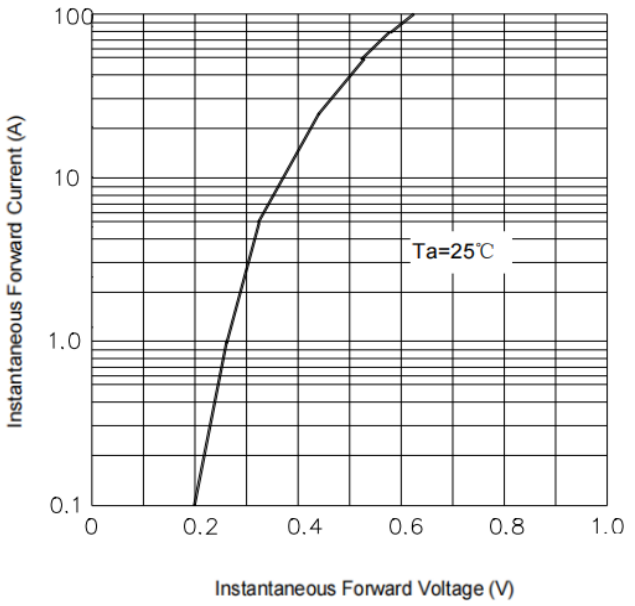


FIG. 4-TYPICAL FORWARD CHARACTERISTICS

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