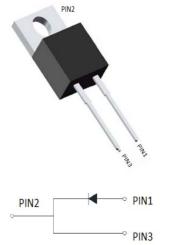


## YJD106504PG1

# Silicon Carbide Schottky Diode

V <sub>RRM</sub>	650 V
I <sub>F</sub> (135°C)	6.5 A
Q <sub>C</sub>	12 nC



#### 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-220AC Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Tin plated leads
- Polarity: As marked

#### ■Maximum Ratings (T<sub>c</sub>=25<sup>°</sup>C Unless otherwise specified)

PARAMTETER	SYMBOL	UNIT	VALUE
Device marking code			D106504PG1
Reverse voltage (repetitive peak) @ T <sub>j</sub> =25°C	V <sub>RRM</sub>	V	650
Reverse voltage (Surge Peak) @ T <sub>j</sub> =25°C	V <sub>RSM</sub>	V	650
Reverse voltage (DC) @ T <sub>j</sub> =25°C	V <sub>DC</sub>	V	650
Continuous forward current @ T <sub>c</sub> =25°C			14
Continuous forward current @ T <sub>c</sub> =135°C	IF	А	6.5
Continuous forward current @ T <sub>c</sub> =156°C			4
Non-repetitive peak forward surge current @ $T_c=25^{\circ}C$ , tp=10ms, Half Sine Wave	I <sub>FSM</sub>	А	26
Power Dissipation@ T <sub>c</sub> =25°C	P <sub>TOT</sub>	w	56
Power Dissipation@ T <sub>c</sub> =110°C	Гтот	vv	24
i²t Value@ Tc=25°C ,tp=10ms	∫i²dt	A <sup>2</sup> S	3.3
Operating junction and Storage temperature range	T <sub>j</sub> ,T <sub>stg</sub>	°C	-55 to +175

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#### Electrical Characteristics

PARAMTETER	SYMBOL	UNIT	TEST CONDITIONS	Тур.	Max.
Forward voltage drap	V <sub>F</sub>	v	I <sub>F</sub> =4A, T <sub>j</sub> =25°C	1.4	1.55
Forward voltage drop	VF		I <sub>F</sub> =4A, T <sub>j</sub> =175°C	1.7	-
Poverse leakage ourrent	Ι <sub>R</sub> μ		V <sub>R</sub> =650V, T <sub>j</sub> =25°C	3	25
Reverse leakage current		μA	V <sub>R</sub> =650V, T <sub>j</sub> =175°C	20	-
Total capacitive charge	Qc	nC	$V_R$ =400V, T <sub>j</sub> =25°C , QC= $\int_0^{VR}$ C(V)dV	12	-
			V <sub>R</sub> =0V, f=1MHZ	210	-
Total capacitance	С	pF	V <sub>R</sub> =200V, f=1MHZ	24	-
			V <sub>R</sub> =400V, f=1MHZ	18	-
Capacitance Stored Energy	Ec	μJ	V <sub>R</sub> =400V	1.5	-

### ■Thermal Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	R <sub>eJ-C</sub>	°C W	2.65

### ■Typical Characteristics

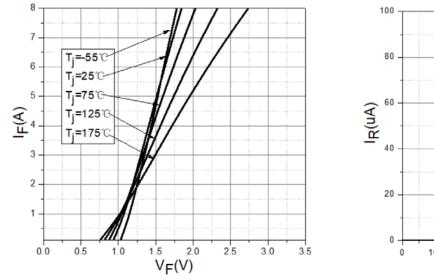
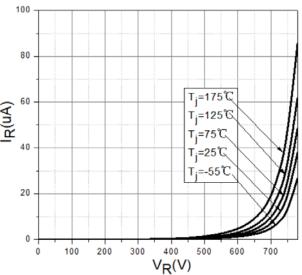
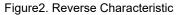


Figure 1. Forward Characteristics





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## YJD106504PG1

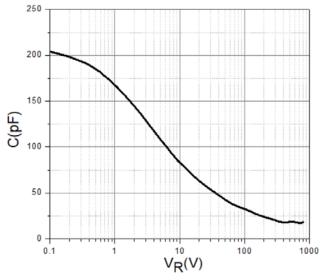


Figure 3. Capacitance vs. Reverse Voltage

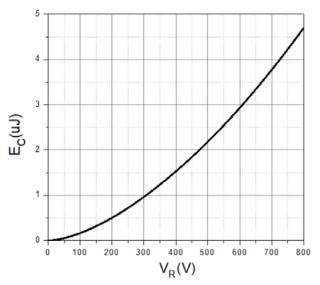
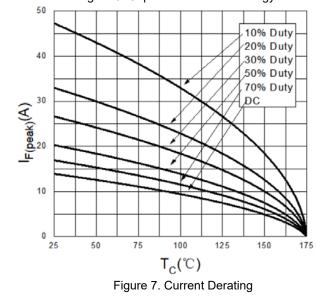


Figure 5. Capacitance Stored Energy



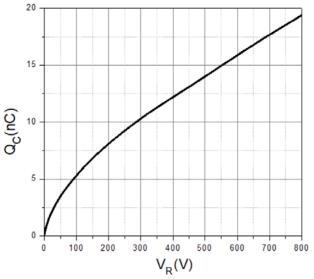
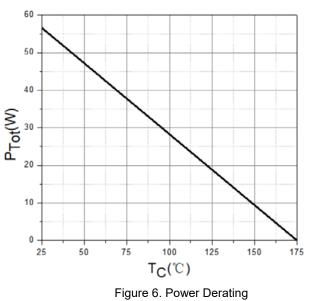
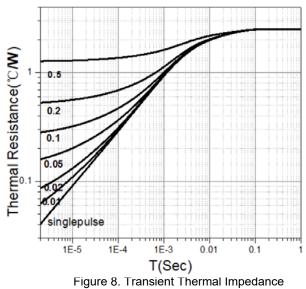


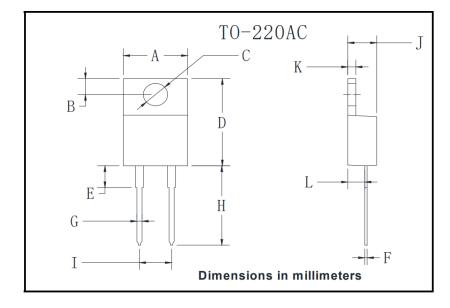
Figure 4. Total Capacitance Charge vs. Reverse Voltage







### Outline Dimensions



TO-220AC				
Dim	Min	Max		
А	9.95	10.35		
В	2.55	2.95		
С	3.75	4.05		
D	14.95	15.25		
Е	3.75	4.25		
F	0.26	0.5		
G	0.68	0.94		
Н	13.3	13.9		
I	4.86	5.26		
J	4.38	4.78		
К	1.14	1.4		
L	2.37	2.79		



## YJD106504PG1

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