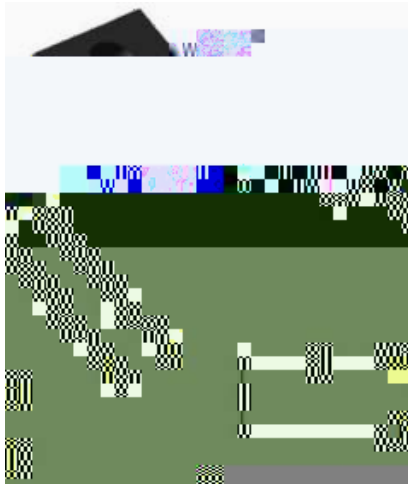




Silicon Carbide Schottky Diode

V_{RRM}	650V
$I_{F66^{\circ}C}$	20A
Q_C	62nC



Features

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

Typical Applications

Typical applications are in power factor inverter, uninterruptible power supply, inverter, electric car and charger.

Mechanical

- Package: TO-220AC
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solderable leads
- Polarity: As marked

Maximum Ratings (unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Device marking code			D106520FQG2
Reverse voltage (repetitive peak) @ $T_J = 25^{\circ}C$	V_{RRM}	V	650
Reverse voltage (Surge Peak) @ $T_J = 25^{\circ}C$	V_{RSM}	V	650
Reverse voltage (DC) @ $T_J = 25^{\circ}C$	V_{DC}	V	650
Continuous forward current @ $T_J = 25^{\circ}C$	I_F	A	24
Continuous forward current @ $T_J = 65^{\circ}C$			20
Non-repetitive peak forward surge current @ $T_C = 25^{\circ}C$, $t_p = 10ms$, Half Sine Wave	I_{FSM}	A	160
Power Dissipation @ $T_J = 25^{\circ}C$	P_{TOT}	W	47
Power Dissipation @ $T_J = 100^{\circ}C$			20
θ_{JA} Value @ $T_C = 25^{\circ}C$, $t_p = 10ms$	θ_{JA}	$^{\circ}C/W$	128
Operating junction and Storage Temperature range	T_J, T_{STG}	$^{\circ}C$	-55 to +175



Y J D106520 F Q G2

■ Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITION	Typ.	Max.
Forward voltage drop	F	V	$I_F = 2.0 A, T_J = 25^\circ C$	1.35	1.55
			$I_F = 2.0 A, T_J = 175^\circ C$	1.75	-
Reverse leakage current	R	μA	$V_R = 650 V, T_J = 25^\circ C$	1	25
			$V_R = 650 V, T_J = 175^\circ C$	5	-
Total capacitive charge	C	nC	$V_R = 400 V, T_J = 25^\circ C$ $Q_C = \int I_C (V) dt$	62	-
Total capacitance			$V_R = 0 V, f = 1 MHz$	1157	-
			$V_R = 200 V, f = 1 MHz$	115.6	-
			$V_R = 400 V, f = 1 MHz$	107	-
Capacitance Stored Energy	gyc	μJ	$V_R = 400 V$	7.8	-

■ Thermal Characteristics (at 25 $^\circ C$ unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	$R_{\theta J-C}$	$^\circ C/W$	3.2

■ Typical Characteristics

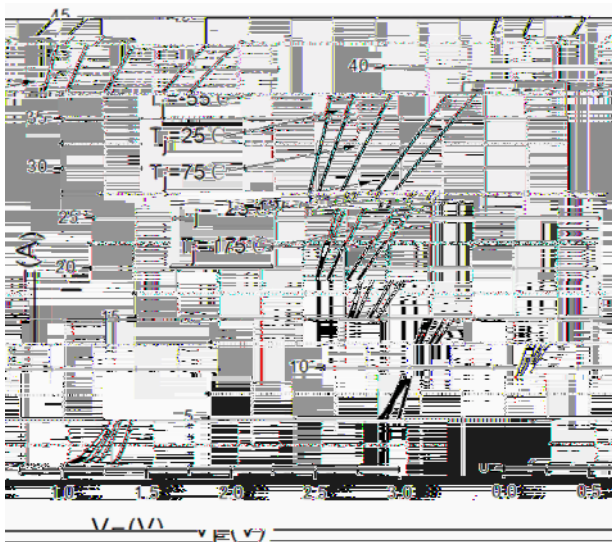


Figure 1. Forward Characteristic

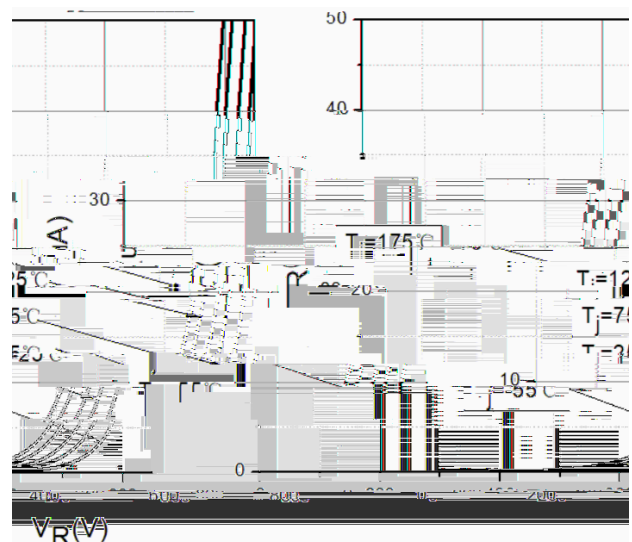


Figure 2. Reverse Characteristic

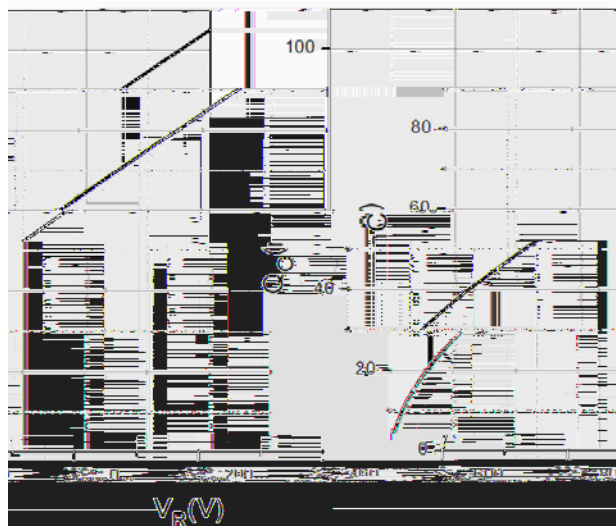
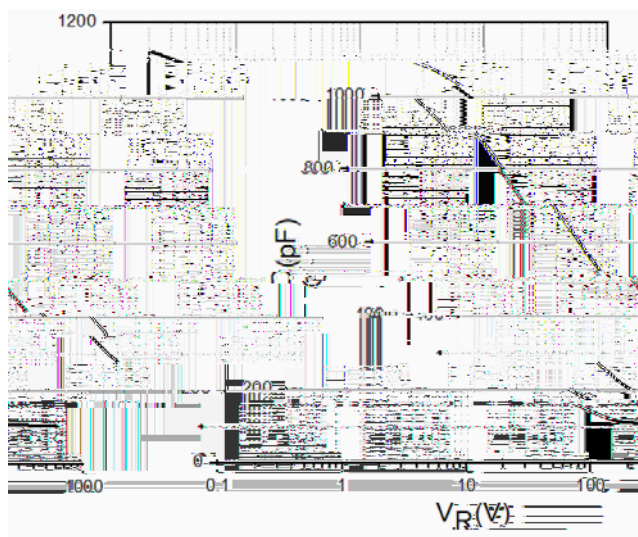


Figure 3. Capacitance vs. Reverse Voltage Figure 4. Total Capacitance Charge vs. Reverse Voltage

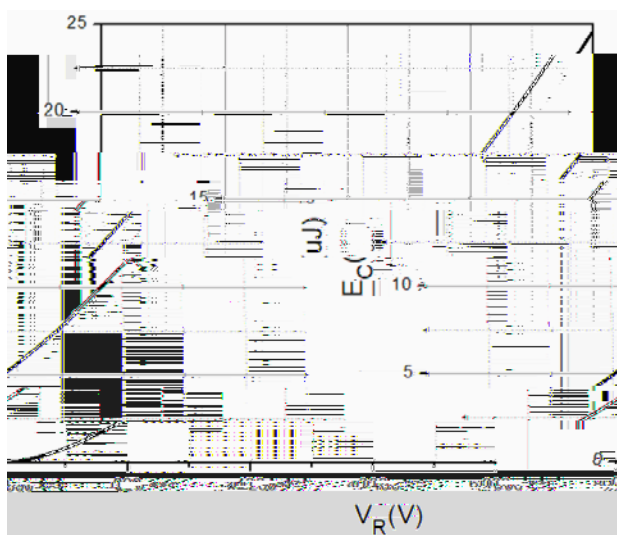


Figure 5. Capacitance vs. Reverse Voltage

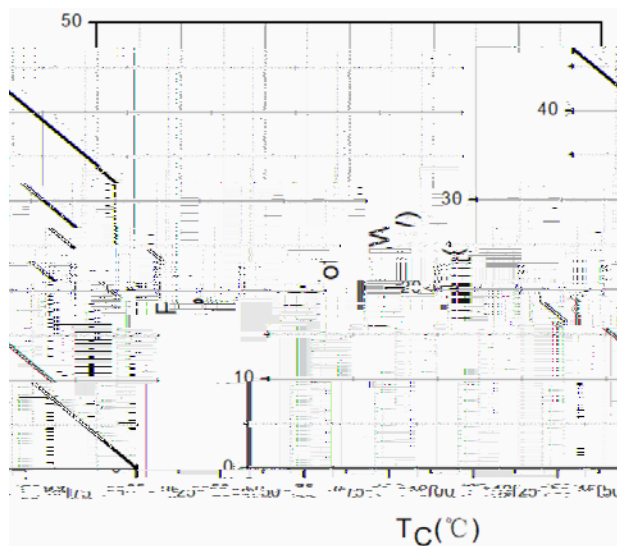


Figure 6. Power Derating

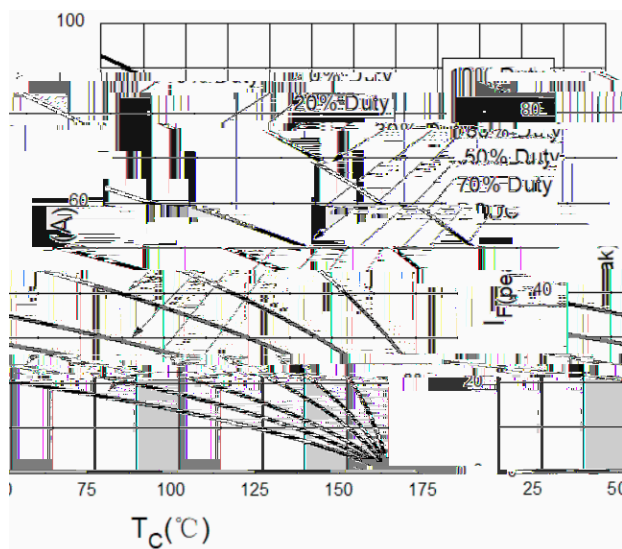


Figure 7. Current Derating

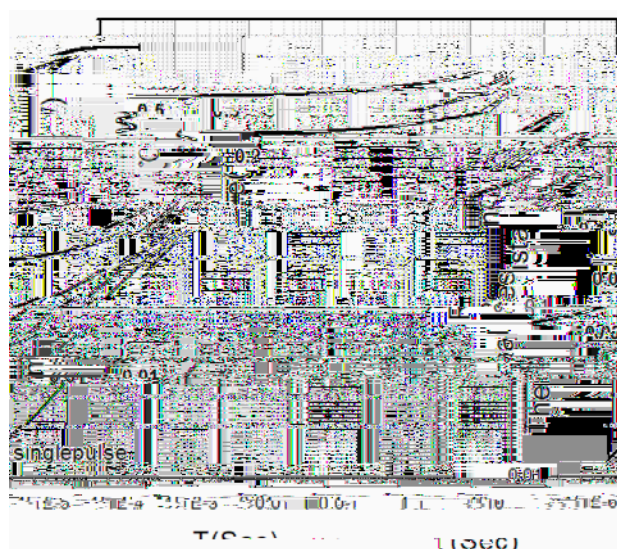
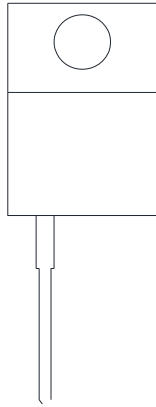


Figure 8. Junction Thermal Impedance



Y J D106520 F Q G2

■ Outline Dimensions



I T O-220AC		
Dim	Min	Max
A	9 . 8	10 . 2
B	2 . 2 5	2 . 7 5
C	2 . 9 5	3 . 4 5
D	14 . 7 5	15 . 2 5
E	3 . 5	4 . 1
F	0 . 4 5	0 . 7 5
G	0 . 4 5	0 . 7 5
H	13 . 3 5	14 . 1 5
I	4 . 9 7	5 . 2 3
J	4 . 3	4 . 8
K	2 . 5	2 . 7 4
L	2 . 5 8	2 . 8 2
M	1 . 0 3	1 . 4 3



Disclaimer

The information in this document is the property of Yangji Technology Co., Ltd. and is subject to change without notice. The company is not responsible for any loss or damage caused by the use of the information in this document.

The product is designed for use as a medical instrument or device. It is not intended for use as a substitute for medical equipment or device. The product is not intended for use in the field of nuclear medicine or nuclear medicine devices. Yangji Technology Co., Ltd. is not responsible for any loss or damage caused by the use of the product in the field of nuclear medicine or nuclear medicine devices.

This publication is for informational purposes only. It is not intended to be used as a substitute for medical equipment or device. The product is not intended for use in the field of nuclear medicine or nuclear medicine devices. Yangji Technology Co., Ltd. is not responsible for any loss or damage caused by the use of the product in the field of nuclear medicine or nuclear medicine devices.