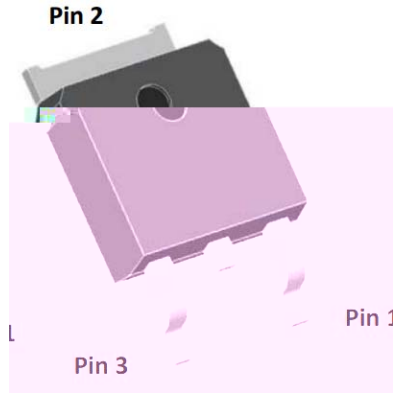
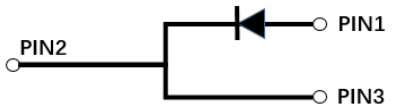
Silicon Carbide Schottky Diode

V_{RRM}	650V
$I_{F\ 135°C}$	11A
Q_C	25nC





Features

- Positive temperature coefficient
- Temperature-independent switching
- Maximum working temperature at 175 °C
- Unipolar devices and zero reverse recovery current
- Zero forward recovery voltage
- 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, automotive battery chargers.

Mechanical Data

- **Package**: TO-252
  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 Unless otherwise specified)

PARAMTETER	SYMBOL	UNIT	VALUE
Device marking code			D106506DQG2
Reverse voltage (repetitive peak) @ T_j=25°C	V_{RRM}	V	650
Reverse voltage (Surge Peak) @ T_j=25°C	V_{RSM}	V	650
Reverse voltage (DC) @ T_j=25°C	V_{DC}	V	650
Continuous forward current @ T_c=25°C	I_F	A	23
Continuous forward current @ T_c=135°C			11
Continuous forward current @ T_c=160°C			6
Non-repetitive peak forward surge current @ T_c=25°C, tp=10ms, Half Sine Wave	I_{FSM}	A	65
Power Dissipation@ T_c=25°C	P_{TOT}	W	100
Power Dissipation@ T_c=110°C			43
i^2t Value@ Tc=25°C ,tp=10ms	$\int i^2dt$	A^2S	21
Operating junction and Storage temperature range	T_j ,T_{stg}	°C	-55 to +175

■Electrical Characteristics

PARAMTETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V_F	V	I_F=6A, T_j=25°C	1.31	1.5
			I_F=6A, T_j=175°C	1.65	-
Reverse leakage current	I_R	μA	V_R=650V, T_j=25°C	0.5	25
			V_R=650V, T_j=175°C	5	-
Total capacitive charge	Q_C	nC	V_R=400V, T_j=25°C , QC=$\int_0^{VR}$C(V)dV	25	-
Total capacitance	C	pF	V_R=0V, f=1MHZ	378	-
			V_R=200V, f=1MHZ	51	-
			V_R=400V, f=1MHZ	49	-
Capacitance Stored Energy	E_C	μJ	V_R=400V	3	-

■Thermal Characteristics (T_a=25 Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	$R_{\theta J-C}$	°C /W	1.49

■Typical Characteristics

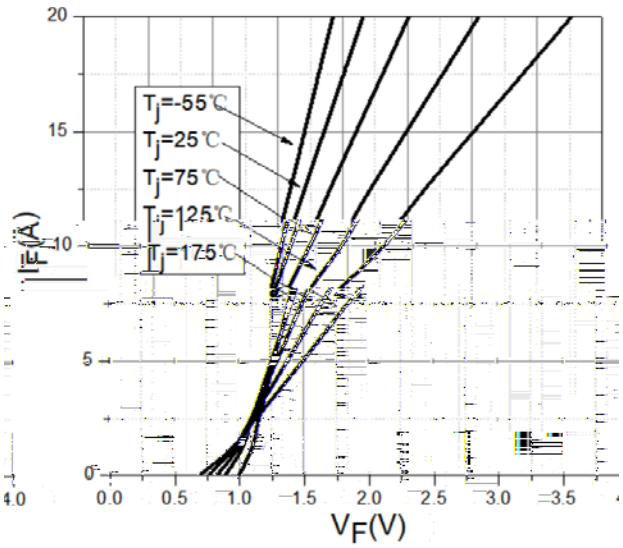


Figure 1. Forward Characteristics

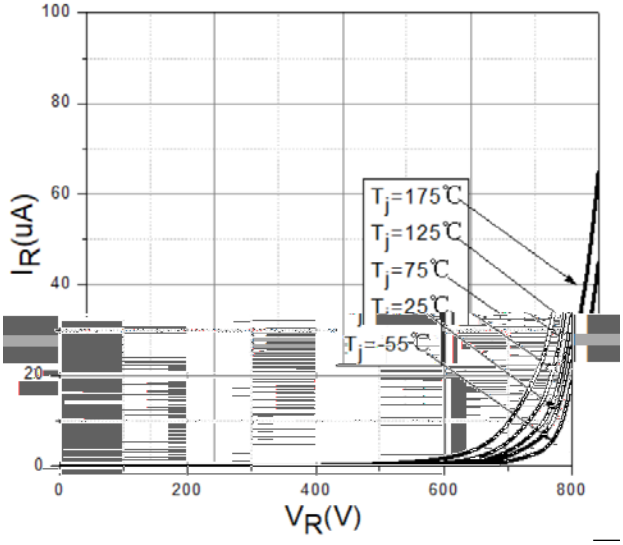
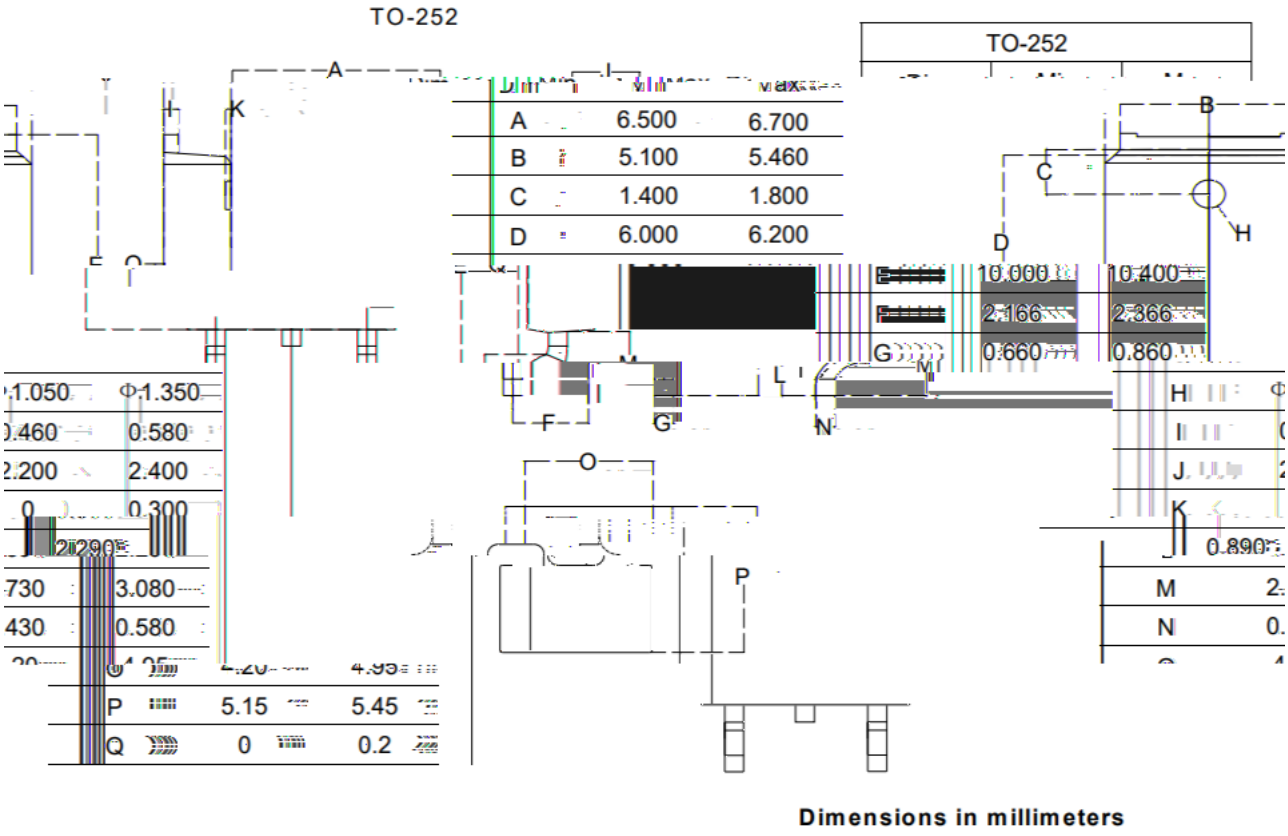


Figure2. Reverse Characteristic

■Outline Dimensions



Dimensions in millimeters

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