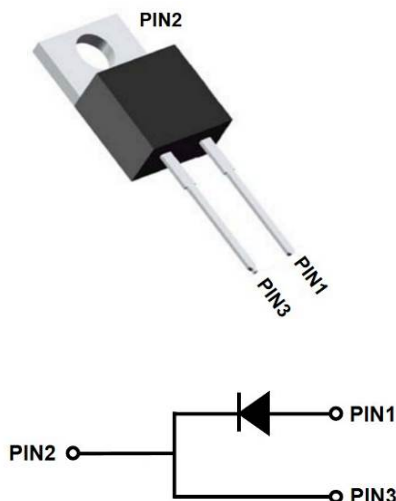


Silicon Carbide Schottky Diode

V_{RRM}	650V
$I_F(135^{\circ}\text{C})$	30A
Q_C	92nC



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
- AEC-Q101 qualified
- 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 ($T_C=25^{\circ}\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Device marking code			D106530PYG4
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	67
Continuous forward current @ $T_C=135^{\circ}\text{C}$			30
Continuous forward current @ $T_C=153^{\circ}\text{C}$			20
Non-repetitive peak forward surge current @ $T_C=25^{\circ}\text{C}$, $t_p=10\text{ms}$, Half Sine Wave	I_{FSM}	A	200
Power Dissipation@ $T_C=25^{\circ}\text{C}$	P_{TOT}	W	197
Power Dissipation@ $T_C=110^{\circ}\text{C}$			85
i^2t Value@ $T_C=25^{\circ}\text{C}$, $t_p=10\text{ms}$	$\int i^2 dt$	A^2S	200
Operating junction and Storage temperature range	T_J, T_{stg}	$^{\circ}\text{C}$	-55 to +175



YJD106530PYG4Q

■Electrical Characteristics ($T_C=25^{\circ}\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min.	Typ.	Max.
Reverse voltage (DC)	V_{DC}	V	$I_R=0.25\text{mA}$, $T_J=25^{\circ}\text{C}$	650	-	-
Forward voltage	V_F	V	$I_F=30\text{A}$, $T_J=25^{\circ}\text{C}$	-	1.38	1.58
			$I_F=30\text{A}$, $T_J=175^{\circ}\text{C}$	-	1.75	-
Reverse current	I_R	μA	$V_R=650\text{V}$, $T_J=25^{\circ}\text{C}$	-	0.5	25
			$V_R=650\text{V}$, $T_J=175^{\circ}\text{C}$	-	10	-
Total capacitive charge	Q_C	nC	$V_R=400\text{V}$, $T_J=25^{\circ}\text{C}$, $Q_C=\int_0^{V_R} C(V)dV$	-	92	-
Total capacitance	C	pF	$V_R=0\text{V}$, $f=1\text{MHz}$	-	1732	-
			$V_R=200\text{V}$, $f=1\text{MHz}$	-	171	-
			$V_R=400\text{V}$, $f=1\text{MHz}$	-	164	-
Capacitance stored energy	E_C	μJ	$V_R=400\text{V}$	-	14	-

■Thermal Characteristics

PARAMETER	SYMBOL	UNIT	VALUE
Thermal resistance	$R_{\theta J-C}$	$^{\circ}\text{C/W}$	0.76

■Typical Characteristics (Typical)

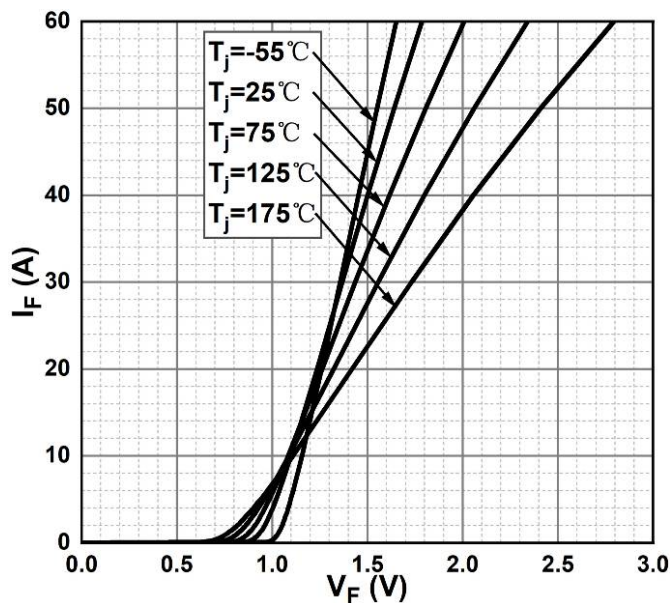


Figure 1. Forward Characteristics

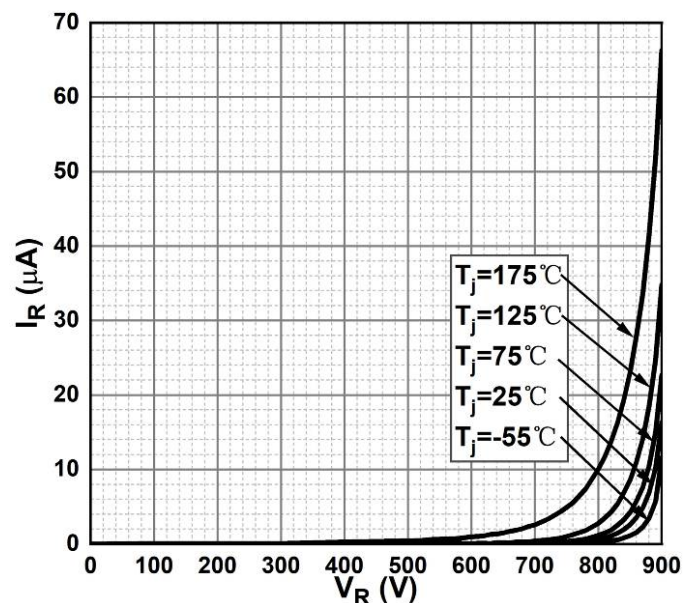
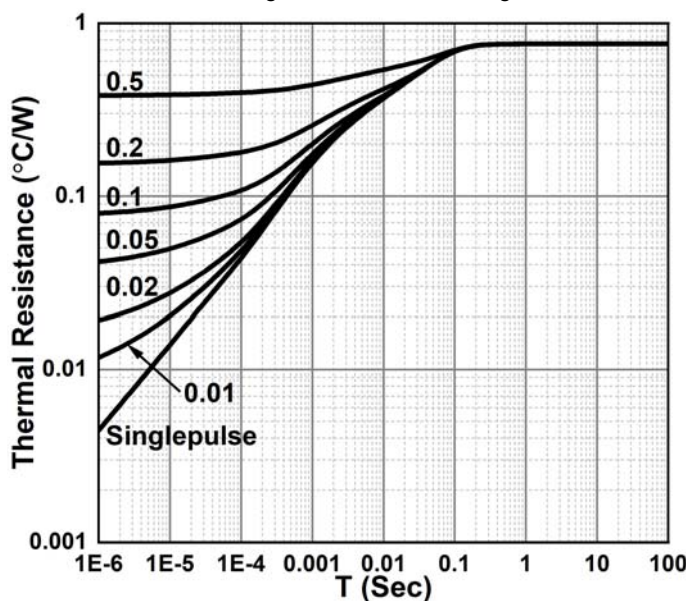
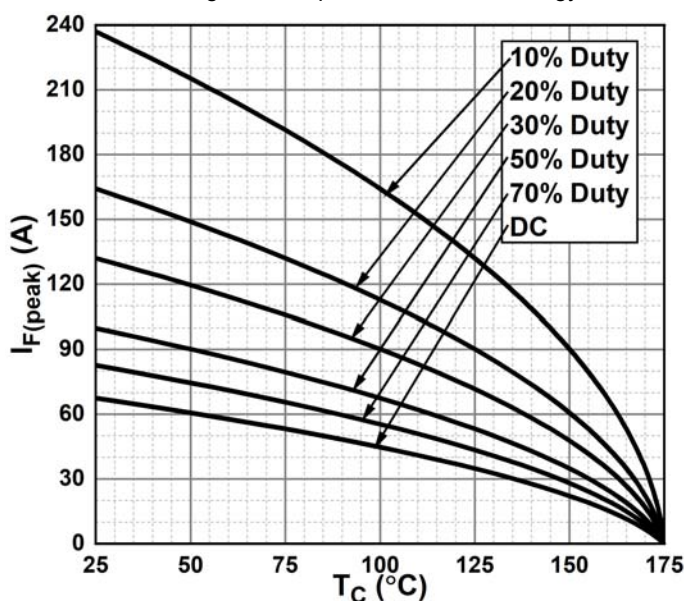
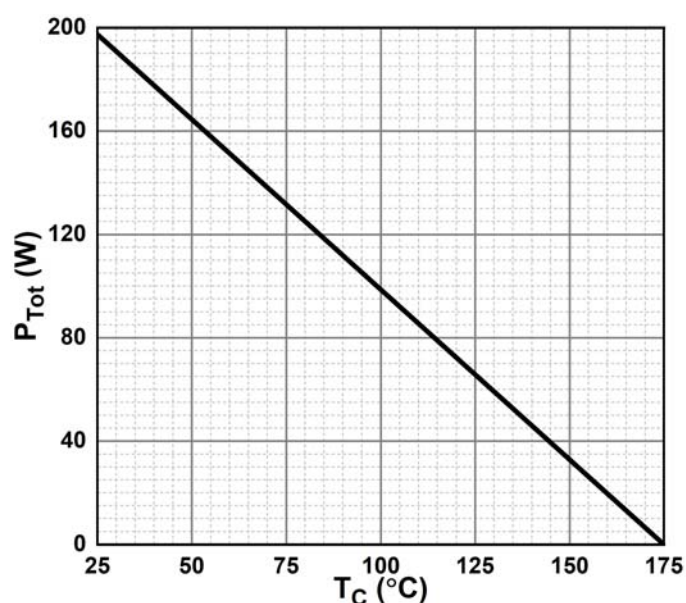
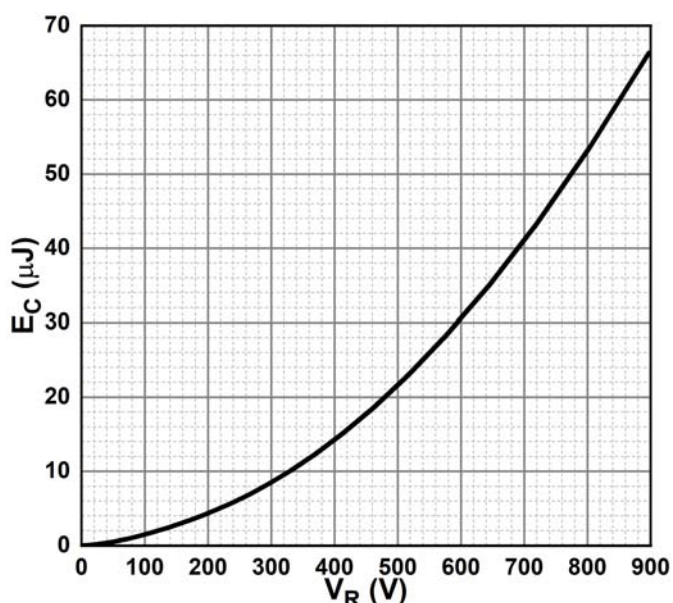
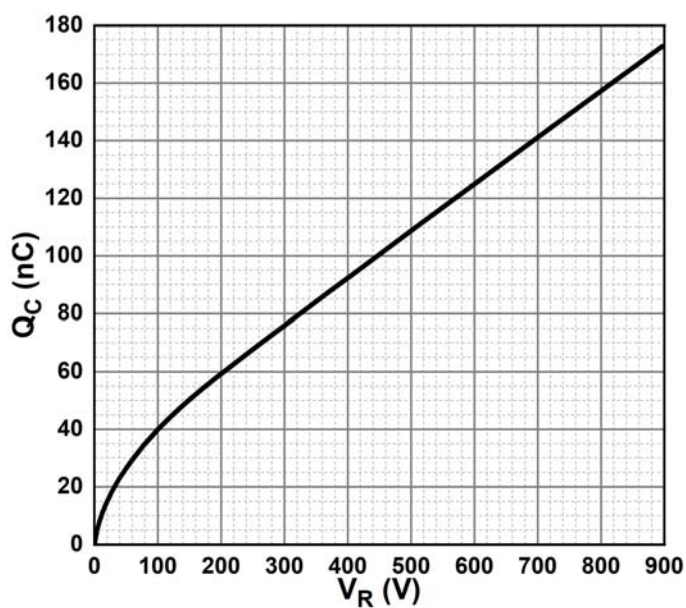
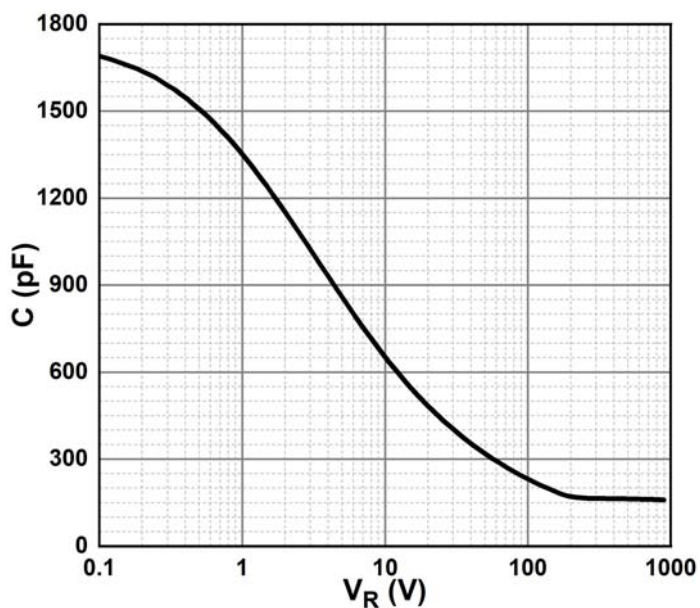


Figure 2. Reverse Characteristics

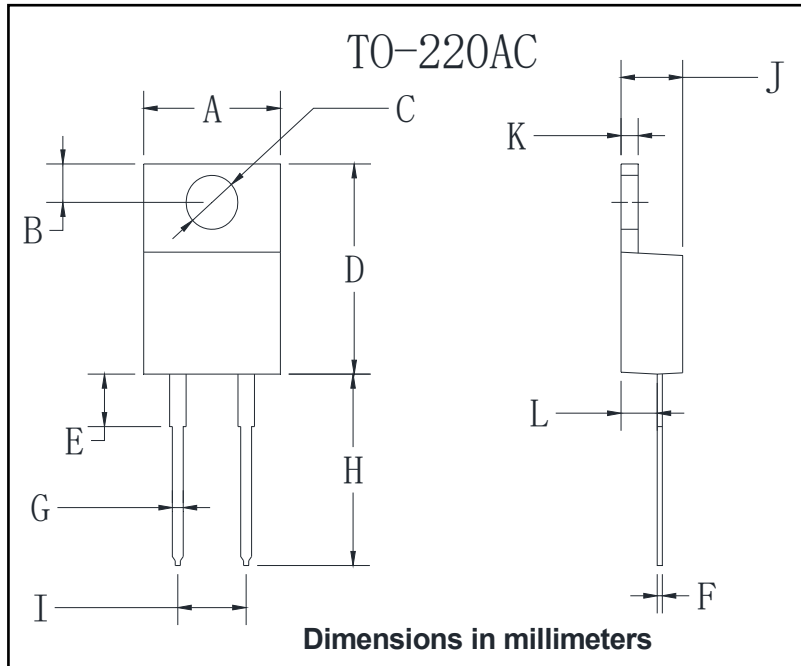


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■Outline Dimensions



TO-220AC		
Dim	Min	Max
A	9.95	10.35
B	2.55	2.95
C	3.75	4.05
D	14.95	15.25
E	3.75	4.25
F	0.26	0.5
G	0.68	0.94
H	13.3	13.9
I	4.86	5.26
J	4.38	4.78
K	1.14	1.4
L	2.37	2.79



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