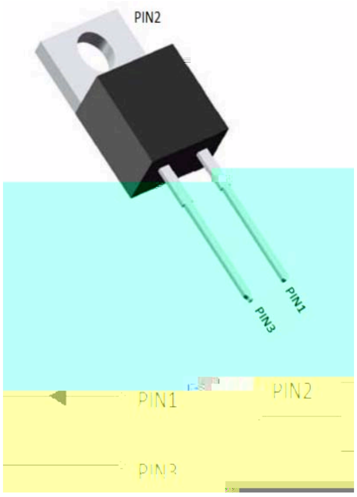
Silicon Carbide Schottky Diode

9_{550}	650V
I_F 135ÁC	3.6A
Q_C	5.2nC



Features

ŏ Positive temperature coefficient
ŏ Temperature - independent switching
ŏ Maximum working temperature at 175 ÁC
ŏ Unipolar devices and zero reverse recovery current
ŏ Zero forward recovery voltage
ŏ Essentially no switching losses
ŏ Reduction of heat sink requirements
ŏ High - frequency operation
- ẹŏtc lα̣ m%p q e Data re c w

ŏPackage : TO - 220AC
Molding compound meets UL 94 V-0 flammability rating , RoHS - compliant , halogen - free
ŏTerminals :Tin plated leads
ŏPolarity : As marked

Maximum Ratings (T_C = 25 Unless otherwise specified)

PARAMTETER	SYMBOL	UNIT	VALUE
Device marking code			D106502PQG3
Reverse voltage (repetitive peak) @ T_j = 25ÁC	V_{RRM}	V	650
Reverse voltage (Surge Peak) @ T_j = 25ÁC	V_{RSM}	V	650
Reverse voltage (DC) @ T_j = 25ÁC	V_{DC}	V	650
Continuous forward current @ T_c = 25ÁC	I_F	A	7.6
Continuous forward current @ T_c = 135ÁC			3.6
Continuous forward current @ T_c = 160ÁC			2
Non - repetitive peak forward surge current @ T_c = 25ÁC , tp = 10ms , Half Sine Wave	I_{FSM}	A	20
Power Dissipation @ T_c = 25ÁC	P_{TOT}	W	45
Power Dissipation @ T_c = 110ÁC			19
i^2t Value @ Tc = 25ÁC , tp = 10ms	^{2}dt Úi	A^2S	2
Operating junction and Storage temperature range	T_j , T_{stg}	ÁC	- 55 to + 175

Electrical Characteristics

PARAMTETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V_F	V	I_F = 2A , T_j = 25°C	1.5	1.6
			I_F = 2A , T_j = 175°C	2.2	-
Reverse leakage current	I_R	μA	V_R = 650V , T_j = 25°C	0.1	10
			V_R = 650V , T_j = 175°C	1	-
Total capacitive charge	Q_C	nC	V_R = 400V , T_j = 25°C , $Q_C = \int_0^{V_R} C(V)\,dV$	5.2	-
Total capacitance	C	pF	V_R = 0V , f = 1MHZ	84	-
			V_R = 200V , f = 1MHZ	9.8	-
			V_R = 400V , f = 1MHZ	9.4	-
Capacitance Stored Energy	E_C	μJ	V_R = 400V	0.6	-

Thermal Characteristics (T_a = 25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	$R_{\theta J-C}$	°C / W	3.33

Typical Characteristics

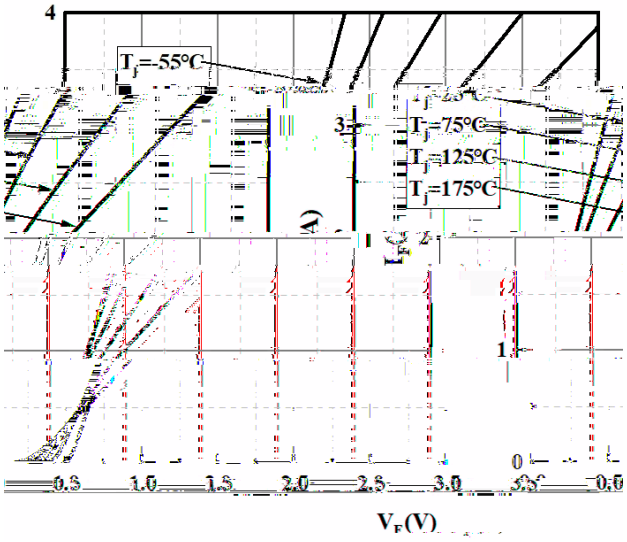


Figure 1. Forward Characteristics

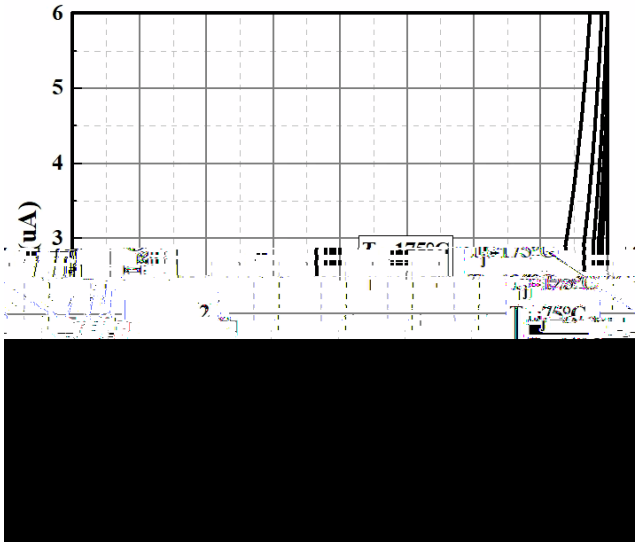
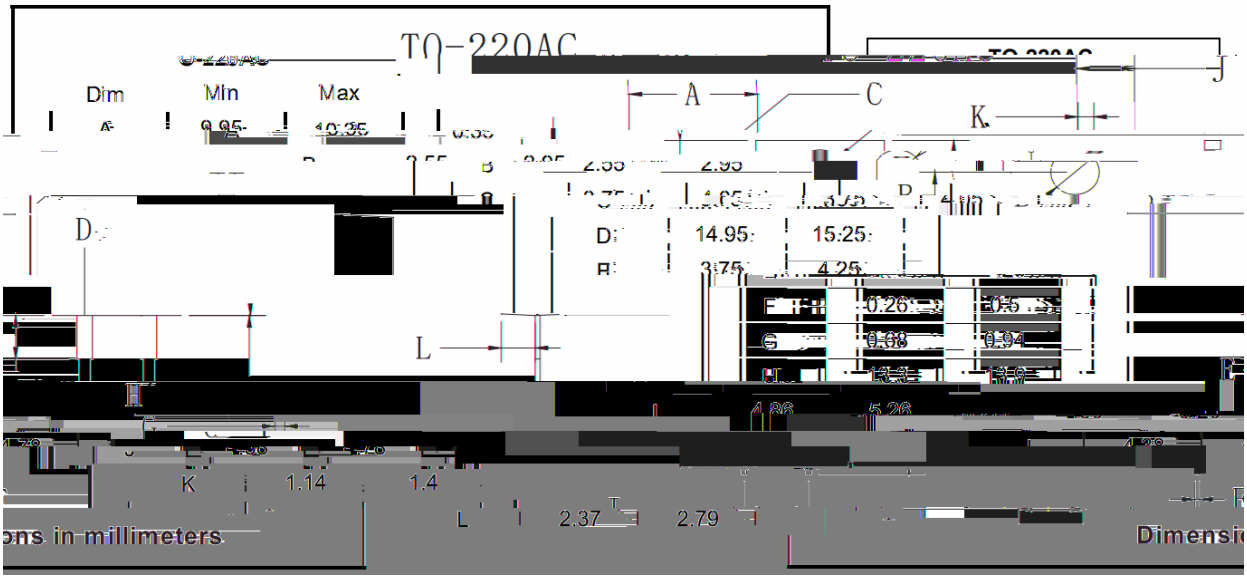


Figure 2. Reverse Characteristic

yOutline Dimensions



'LVFODLPHU

7KH LQIRUPDWLRQ LQ WKLV GRFXPHQW<DQJ]KRX <HDQJ]H (OHFWURQLF &R /WG UHVHUYHV WKH ULJKW WR PDNH FKDQJHV WR WKLV SURGXFW RU LWV VSHFLILFDWLRQV ZLWKRXW QRWLFH
RU RWKHUZLVH

7KH SURGXFW OLVWHG KHUHLQ LV GHVLJQHG IRU XVH ZLWK RUGLQDU\ HOHFWURQLF HTXLSPHQW RU GHYLFHV
HTXLSPHQW RU GHYLFHV VKRXOG FKHFN WKH UHOLDELOLW\ RI WKH SURGXFW