10A 650V Silicon Carbide Schottky Diode

PCP10S065R

General Description

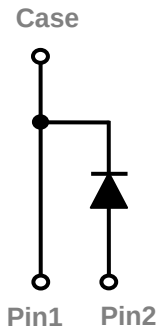
These 650V high performance series of SiC schottky diodes are using the most advanced technology to suit for high frequency and high efficiency power systems with extreme low reverse recovery charge and can be stand up to 175°C maximum junction temperature.

V_{BR}	$I_{F(TC = 154°C)}$	Q_C
650V	10A	30nC

Features

- *650V , 10A ,175℃ junction temperature*
- *Extremely fast switching*
- *Ultra Low Reverse Recovery Current*
- *Positive temperature coefficient*
- *Green device available*

TO220-2L Pin Configuration



Applications

- *Switching mode power supplies*
- *Motor drives*
- *Power Converters*
- *PFC, Power factor correction*

Absolute Maximum Ratings (Tc=25°C unless otherwise noted)

Symbol	Parameter	Rating	Units
V_R	DC Peak Reverse Voltage, T_j=25°C	650	V
V_{RRM}	Repetitive Peak Reverse Voltage, T_j=25°C	650	V
V_{RSM}	Surge Peak Reverse Voltage, T_j=25°C	650	V
I_F	Continuous Forward Current, T_C=25°C	32	A
	Continuous Forward Current, T_C=154°C	10	A
I_{FSM}	Non-Repetitive Forward Surge current T_C = 25°C, T_P=10ms Half Sine Pulse	90	A
T_J	Maximum operating Junction Temperature Range	175	°C
T_{STG}	Storage Temperature Range	-55 to 175	°C

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JC}$	Thermal Resistance Junction to Case	1.18	---	°C /W

Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
VDC	DC Blocking Voltage		650	---	---	V
V_F	Forward Voltage	I_F=10A , T_J=25°C	---	1.37	1.6	V
		I_F=10A , T_J=175°C	---	1.66	---	V
I_R	Reverse Current	V_R=650V , T_J=25°C	---	---	60	uA
		V_R=650V , T_J=175°C	---	---	---	uA
Q_C	Total Capacitive Charge	V_R=400V	---	30	---	nC
C	Total Capacitance	V_R=1V, f=1MHz	---	430	---	pF
		V_R=200V, f=1MHz	---	55	---	
		V_R=400V, f=1MHz	---	54	---	

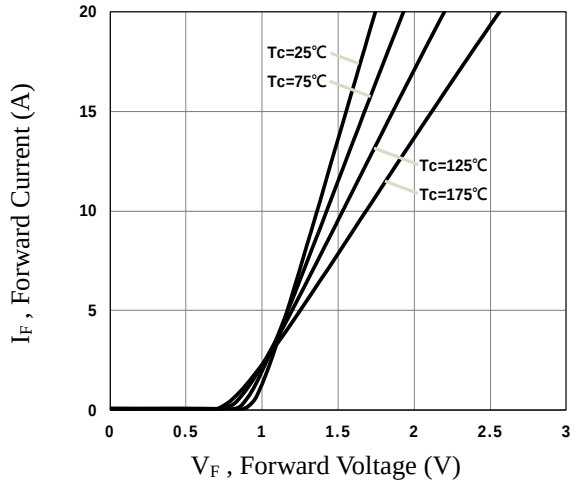


Fig.1 Forward Characteristics

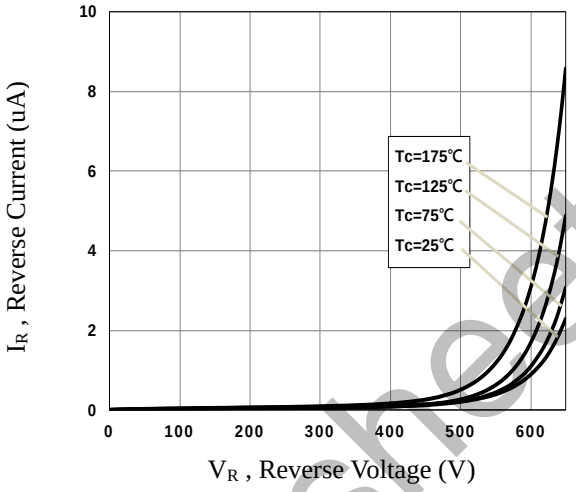


Fig.2 Reverse Characteristics

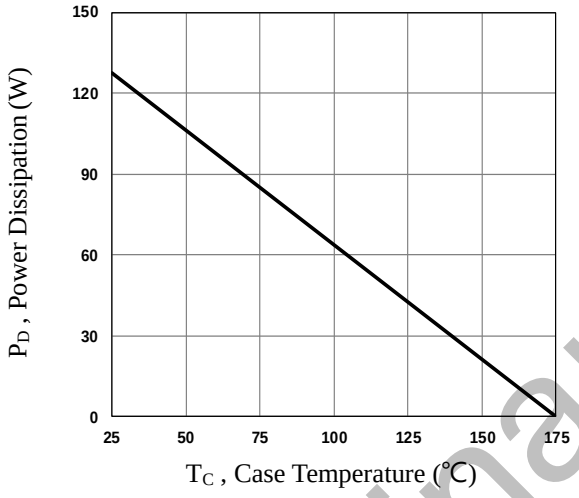


Fig.3 Power Dissipation

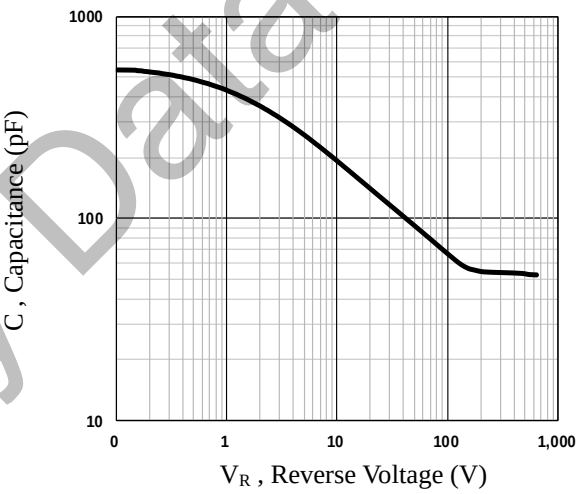
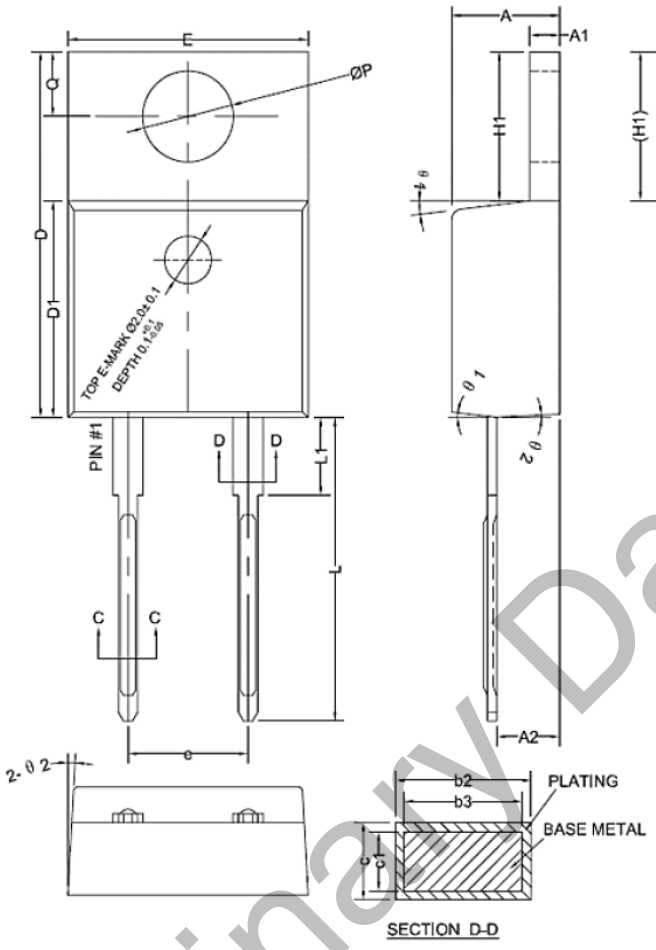


Fig.4 Capacitance Characteristics

TO220-2L PACKAGE INFORMATION



SYMBOL	mm			SYMBOL	mm		
	MIN	NOM	MAX		MIN	NOM	MAX
A	4.35	4.55	4.75	E	9.85	10.10	10.30
A1	1.25	---	1.35	E1	7.60	---	8.20
A2	2.2	2.6	2.8	e	4.90	5.10	5.20
b2	1.15	1.32	1.45	H1	6.35	6.45	6.55
b3	1.12	---	1.42	L	12.70	---	13.20
c	0.45	0.55	0.60	L1	2.80	---	3.40
c1	0.42	---	0.57	ΦP	3.30	3.60	3.85
D	15.15	15.50	16.00	Q	2.80	---	2.95
D1	9.05	9.15	9.25	θ1	5°	7°	9°
D2	12.20	---	14.00	θ1	1°	3°	5°