CSR006-065D3

SiC SCHOTTKY DIODE TYPE 6A

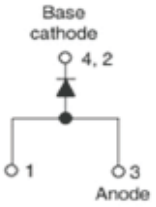
Features

- Low reverse current
- Good surge current capability
- No reverse recovery current
- Halogen Free, and RoHS Compliant
- System efficiency improvement over Si diodes
- Suitable for high power application
- V_{DC} 650 V
- I_F (T_C=25 / 147 °C) 14A/6A

DPAK（TO-252AA）

Benefits

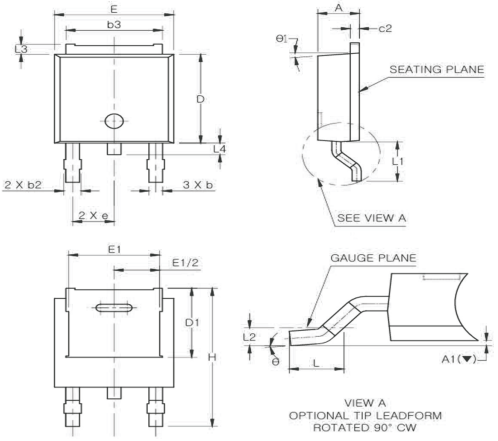
- Higher system level efficiency
- Increase system power density
- Reduction of heat sink requirements
- Parallel devices without thermal runaway



Applications

- Switch mode power supplies (SMPS)
- Server/telecom power supplies
- Industrial power supplies
- Solar
- UPS

Package Dimensions



Maximum Ratings

Operating Junction Temperature : -55℃ to +175℃

Storage Temperature : -55℃ to +150℃

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSR006-065D3	650V	650V

Maximum Rating	Symbol	Conditions	Value	Unit
Repetitive peak reverse voltage	V_{RRM}	T_J=25 °C	650	V
Continuous forward current	I_F	T_C=25 °C	14	A
		T_C=147 °C	6	
Non-repetitive forward surge current	I_{FSM}	T_C=25 °C，tp=10μs	45	
Non-repetitive forward surge current	$I_{F\ max.}$	T_C=25 °C，tp=10μs	450	
Power Dissipation	P_D	T_C=25 °C	65	W

SYMBOL	MIN	NOM	MAX
A	2.20	2.30	2.40
A1 (▼)	0.00	–	0.127
b	0.66	0.76	0.86
b2	–	–	0.96
b3	5.04	5.34	5.64
c2	0.40	0.50	0.60
D	5.90	6.10	6.30
D1		(4.75)	
E	6.40	6.60	6.80
E1		(5.04)	
e		2.30 BSC	
H	9.20	9.50	9.80
L	1.27	1.47	1.67
L1	2.50	2.70	2.90
L2		0.508 BSC	
L3	0.50	0.70	0.90
L4	0.60	0.80	1.00
θ	0°	–	10°
θ1		(5°)	

NOTE

1. THESE DIMENSIONS DO NOT INCLUDE PROTRUSIONS OF THE MOLD.
2. THE "( )" MARK IS THE REFERENCE
3. COPLANARITY : MAX 0.10mm
4. THE "L4" SYMBOL IS A PROTRUSION OF THE LEAD FRAME.

Electrical Characteristics, at T_J =25 °C, unless otherwise specified.

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	V_{DC}		650	-	-	V
Diode forward voltage	V_F	I_F =6A, T_J =25°C	-	1.3	1.5	
		I_F =6A, T_J =175°C	-	1.6	-	
Reverse current	I_R	V_R =650V, T_J =25°C	-	1	50	μA
		V_R =650V, T_J =175°C	-	5	200	

AC Characteristics

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_C	V_R=400V	-	12	-	nC
Total capacitance	C	V_R=0V, f=1 MHz	-	340	-	pF
		V_R=400V, f=1 MHz	-	32	-	
Total capacitive energy	E_C	V_R=400V	-	5	-	μJ

Thermal Characteristics

Static Characteristics	Symbol	Values	Unit
		max.	
Thermal resistance from junction to case	$R_{\theta JC}$	2.3	°C/W

Typical Device Performance

Fig.1 Typical Forward Characteristics ($I_F = f(V_F)$, tp = 20μs)

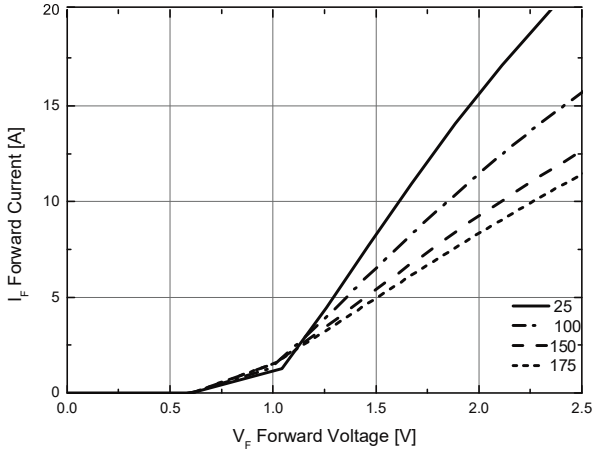


Fig.2 Typical Reverse Current as Function of Reverse Voltage

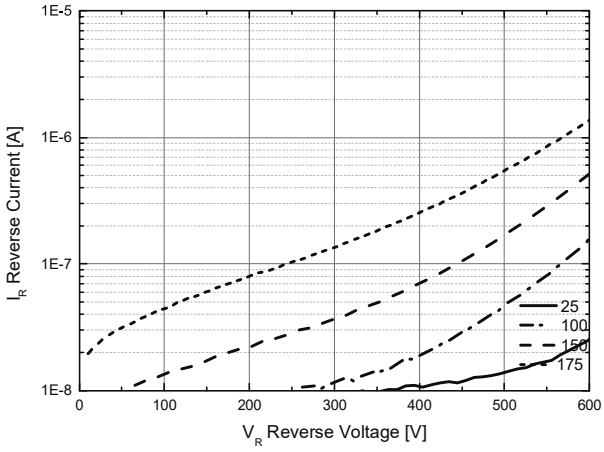


Fig.3 Diode Forward Current as Function of Temperature

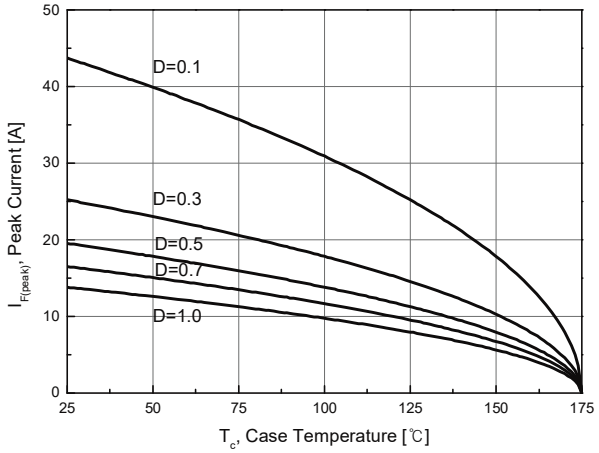


Fig.4 Typical Capacitance as Function of Reverse Voltage

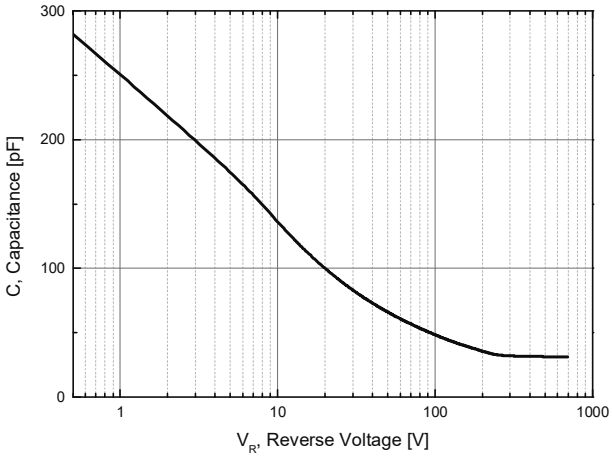


Fig.5 Typical capacitive charge

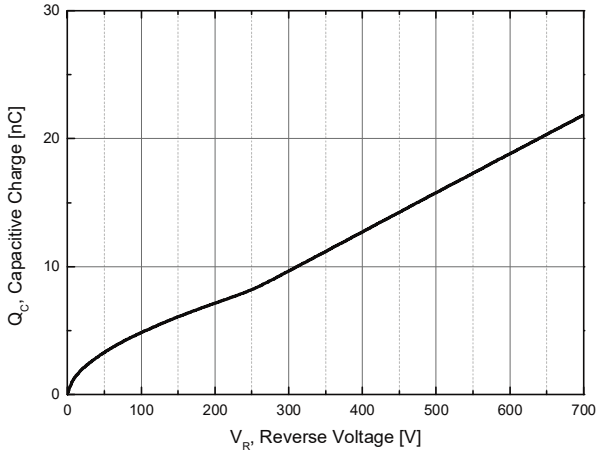
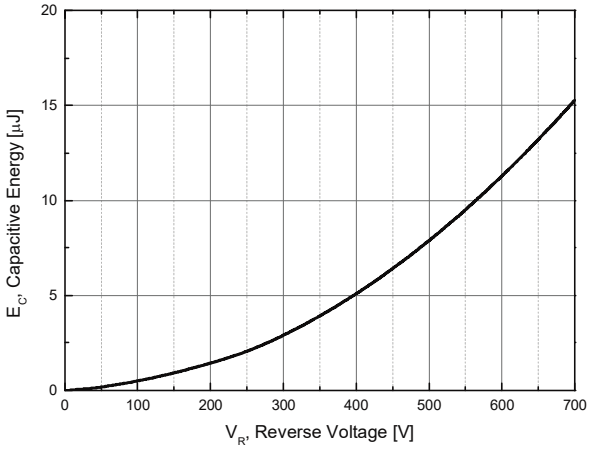


Fig.6 Typical capacitance stored energy



Typical Device Performance

Fig.7 Power Dissipation as Function of Case Temperature

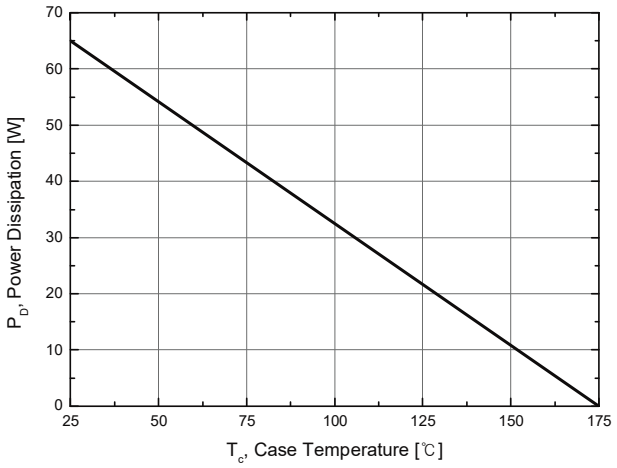
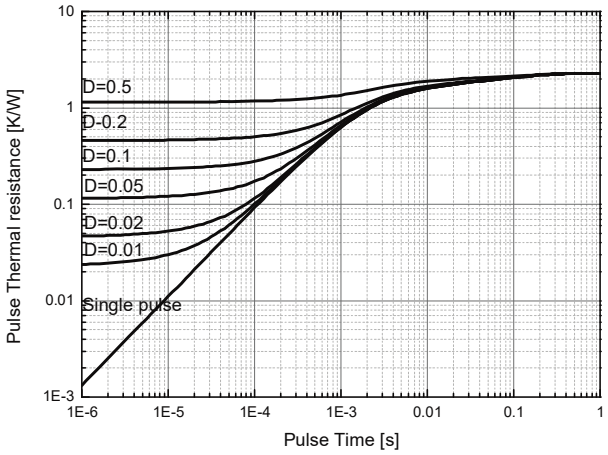


Fig.8 Transient Thermal impedance



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