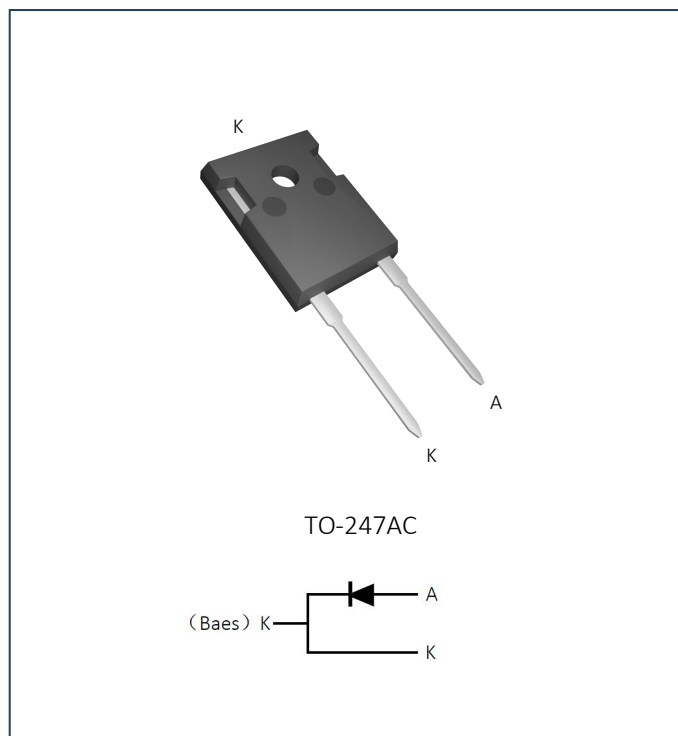


DSC50120P

碳化硅肖特基二极管

Silicon Carbide Schottky Diode

封装外形 Package



主要参数 Device summary

Symbol	Value
$I_{F(AV)}$	50A
V_{RRM}	1200V
$V_{F(typ)}$	1.95V/50A@175°C
$I_{R(typ)}$	0.02mA@175°C
$T_{j(max)}$	175°C

机械数据 Mechanical Data

- 模塑料符合 UL 94 V-0 易燃等级, 符合 RoHS 标准
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- 端子: 镀锡引线, 可焊接 J-STD-002 和 JESD22-B102
Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- 极性: 本体标记
Polarity: As marked on body

产品特点 Features

- ◆ 高耐压能力 High reverse voltage
- ◆ 超快开关速度 Ultra fast switching speed
- ◆ 零反向恢复电流 Zero reverse recovery current
- ◆ 高结温 High Junction temperature
- ◆ 低漏电 Low leakage current
- ◆ 高可靠性 High reliability
- ◆ 环保产品 RoHS product

最大额定值 Maximum ratings

项目 Parameter	符合 Symbol	数值 Value	单位 Unit
反向重复峰值电压 Peak repetitive reverse voltage	VRRM	1200	V
正向电流 forward current	IF(AV)	Tc=25 °C 125	A
		Tc=140 °C 50	
浪涌电流 Non-repetitive single pulse surge current t=8.3ms	IFSM	450	A
功率耗散 Power Dissipation	Tc=110 °C	196	W
结温 Junction temperature	Tj	-55~+175	°C
存储温度 Storage temperature	TSTG	-55~+175	°C

电特性 Electrical characteristics(Tc=25°C)

项目 Parameter	测试条件 Tests conditions		数值 Value			单位 Unit
			最小值(min)	典型值(typ)	最大值(max)	
VRRM	IR=0.05mA		1200	-	-	V
IR 反向漏电流	Tj=25°C	VR=1200V	-	0.005	0.2	mA
	Tj=175°C		-	0.02	0.4	
VF 正向电压	Tj=25°C	IF=50A	-	1.45	1.75	V
	Tj=175°C		-	1.95	2.5	
总电容电荷量 QC	Tj=25°C	VR=800V QC= ∫ 0VRC(V)dVp	-	267	-	nC
总电容量 C	Tj=25°C	VR=1V, f=1MHZ		2696		pF
		VR=400V, f=1MHZ		252		
		VR=800V, f=1MHZ		192		
电容储存能量 EC		VR=800V		77		nJ

热特性 Thermal characteristics(Tc=25°C)

Parameter	Symbol	Value	Unit
热阻 Thermal resistance from junction to case	Rth(j-c)	0.35	°C/W

典型特征曲线图 Typical Characteristic Curve

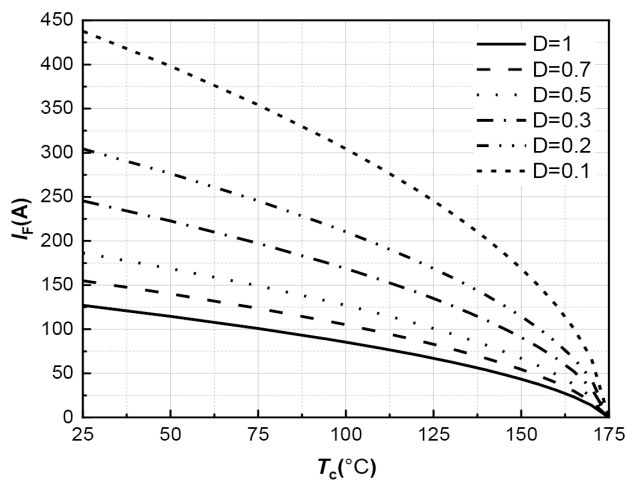


Figure 3. Diode forward current as function of temperature, D=duty cycle

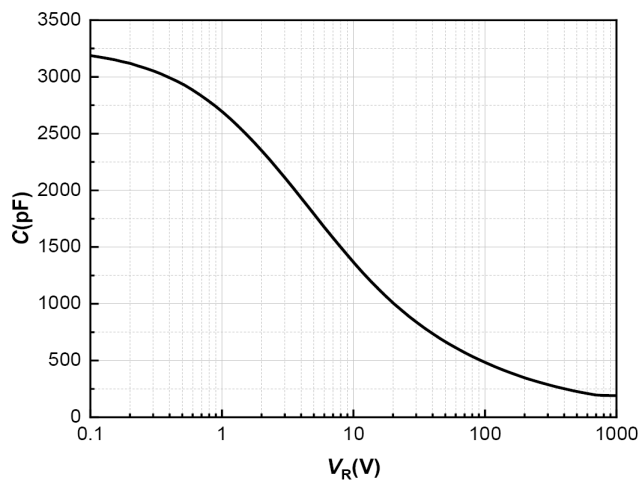


Figure 4. Typical capacitance as function of reverse voltage, $C=f(V_R)$; $T_j=25^{\circ}\text{C}$; $f=1\text{ MHz}$

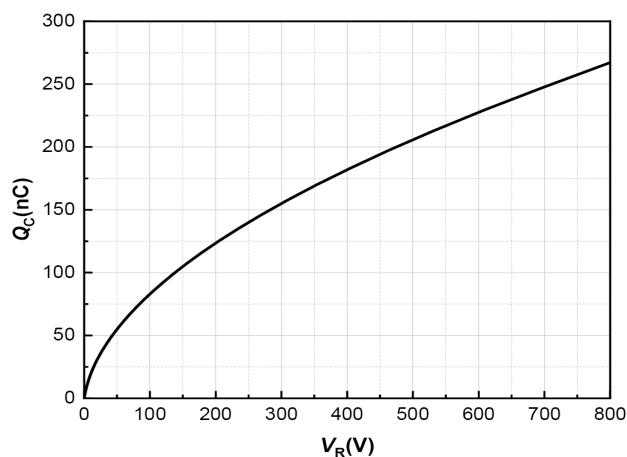


Figure 5. Typical reverse charge as function of reverse voltage

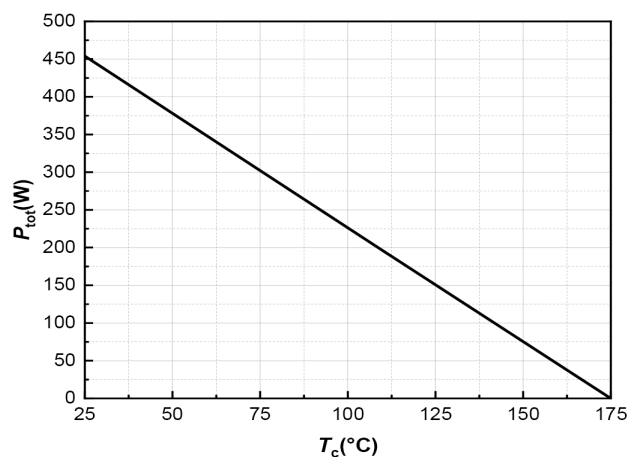


Figure 6. Power dissipation as function of case temperature

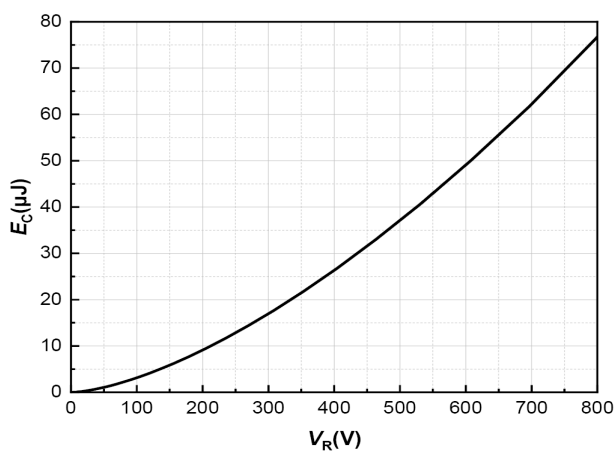


Figure 7. Capacitance stored energy

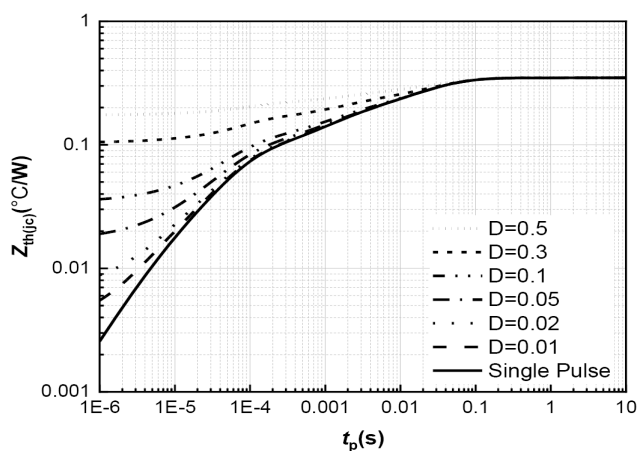
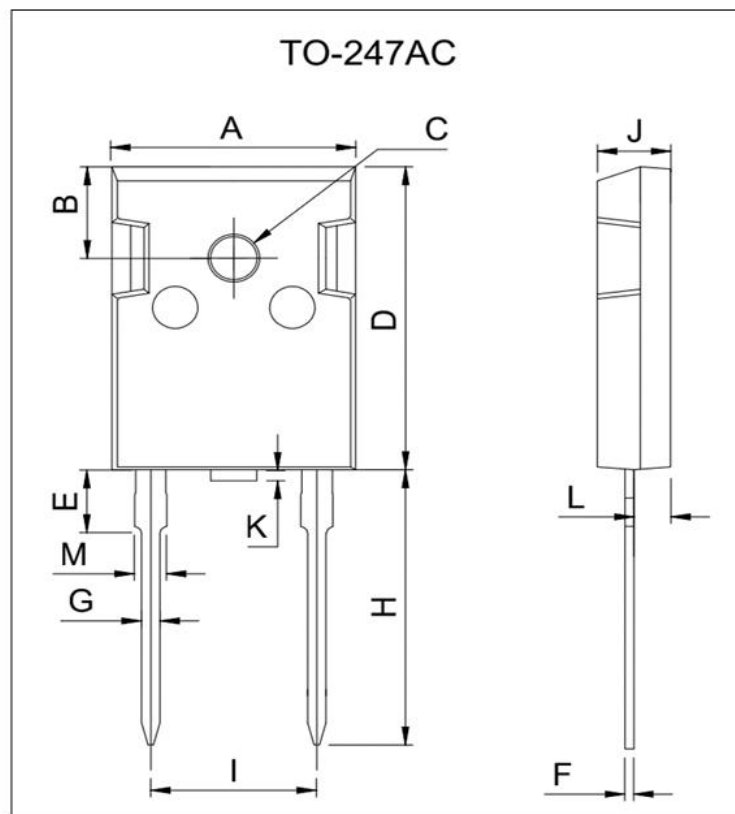


Figure 8. Max. transient thermal impedance, $Z_{th(jc)} = f(t_p)$, parameter: $D = t_p / T$

外形尺寸图及焊盘布局参考 Outline Dimensions and Pad Layout Reference



TO-247AC _(mm)			
Dim	Min	Typ	Max
A	15.80	16.00	16.20
B	6.30	6.50	6.70
C	3.05	3.20	3.35
D	21.20	21.50	21.80
E	3.80	4.00	4.20
F	0.50	0.60	0.70
G	1.00	1.20	1.40
H	19.20	19.50	19.70
I	10.70	10.90	11.10
J	4.60	4.80	5.00
K	0.60	0.80	1.00
L	2.20	2.40	2.60

订购信息 Ordering Information

订单型号 Order code	印记 Marking	封装 Package	重量 Weight (g)	包装形式 Packing	基本包装 Base qty (Pcs)	盒 Box (Pcs)	箱 Carton (Pcs)
WDSC50120P000P	DSC50120P	TO-247AC	5.82	管装 Tube	30	600	2400

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