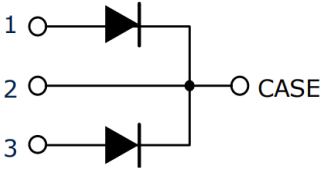


关键参数	Key Parameters		电路结构	Circuit Configuration
V_R		1200	V	
V_F	Typ.	1.40	V	
I_F	Max.	40	A	

典型应用	Typical Application
● OBC	On Board Charger
● 充电桩	Battery Chargers
● 不间断电源	UPS

图 1. 电路结构

Fig. 1 Circuit configuration

器件外形 Device Appearance

特点	Features
● 零反向恢复电流	No Reverse Recovery Current
● 高效率	Higher Efficiency
● 易并联使用	Easy Paralleling

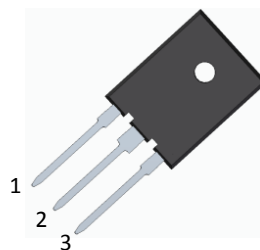


图 2. 模块外形

Fig. 2 Device appearance

最大额定值 Maximum Ratings

符号 Symbol	参数名称 Parameter	测试条件 Test Conditions	数值 Value	单位 Unit
V_{RRM}	反向重复峰值电压 Repetitive peak reverse voltage		1200	V
I_F	正向持续直流电流, 由 $T_{vj\max}$ 限制 Continuous forward current, limited by $T_{vj\max}$	$T_C = 25\text{ }^{\circ}\text{C}, T_{vj\max}=175\text{ }^{\circ}\text{C}$	20/40	A
I_{FRM}	正向重复峰值电流, 由 $T_{vj\max}$ 限制 Maximum repetitive forward current, limited by $T_{vj\max}$	$T_C = 25\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$	80/160	A
		$T_C = 100\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$	60/120	A
I_{FSM}	正向不重复浪涌电流 Non-Repetitive peak forward surge current	$T_C = 25\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$, 正弦半波	440/880	A
		$T_C = 25\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$, Half Sine Pulse		
		$T_C = 150\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$, 正弦半波	320/640	A
I^2t	I^2t 值 I^2t value	$T_C = 25\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$, 正弦半波	620/2478	A ² s
		$T_C = 25\text{ }^{\circ}\text{C}, t_p = 10\text{ms}$, Half Sine Pulse		

R_t	R_t 值 R_t value	$T_C = 150\text{ }^{\circ}\text{C}$, $t_P = 10\text{ms}$, 正弦半波 $T_C = 150\text{ }^{\circ}\text{C}$, $t_P = 10\text{ms}$, Half Sine Pulse	328/1311	A^2s
$T_{vj\text{ max}}$	最大允许结温 Max. Junction temperature		175	$^{\circ}\text{C}$
$T_{vj(\text{op})}$	工作结温 Operation junction temperature		-55...+175	$^{\circ}\text{C}$
T_{stg}	存储温度 Storage temperature range		-55...+150	$^{\circ}\text{C}$
M	安装力矩 - M3 Mounting Torque - M3		0.6	Nm

电特性值
Electrical Characteristics

 除非特别声明，否则 $T_{vj} = 25\text{ }^{\circ}\text{C}$
 $T_{vj} = 25\text{ }^{\circ}\text{C}$ unless otherwise stated

符号 Symbol	参数名称 Parameter	测试条件 Test Conditions	最小值 Min.	典型值 Typ.	最大值 Max.	单位 Unit
V_{DC}	击穿电压 DC Blocking Voltage	$I_R = 100\mu\text{A}$	1200			V
V_F	正向电压 Diode forward voltage	$I_F = 20\text{A}/40\text{A}$		1.40		V
		$I_F = 20\text{A}/40\text{A}$, $T_{vj} = 175\text{ }^{\circ}\text{C}$		1.80		V
I_R	反向电流 Reverse current	$V_R = 1200\text{V}$			1	μA
		$V_R = 1200\text{V}$, $T_{vj} = 175\text{ }^{\circ}\text{C}$			5	μA
Q_C	总电容电荷 Total Capacitive Charge	$V_R = 800\text{V}$		100/200		nC
C	总电容 Total Capacitance	$V_R = 1\text{V}$, $f = 100\text{KHz}$		999/1988		pF
		$V_R = 400\text{V}$, $f = 100\text{KHz}$		90/182		
		$V_R = 800\text{V}$, $f = 100\text{KHz}$		77/154		

热学特性
Thermal Characteristics

符号 (Symbol)	参数名称 (Parameter)	条件 (Test Conditions)	最小值 (Min)	典型值 (Typ)	最大值 (Max)	单位 (Unit)
$R_{th(j-c)}$	结壳热阻 Thermal resistance, junction – case			0.62/0.31		K/W

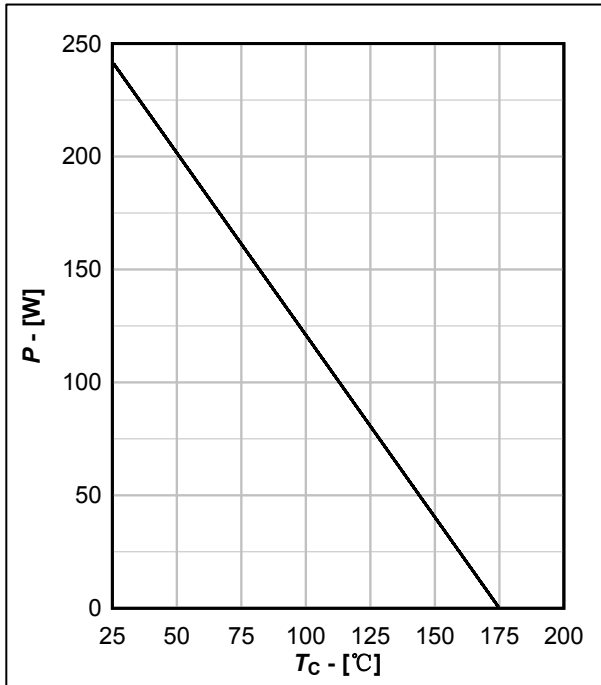


图 3 典型功率降额曲线, $P_{\text{tot}}=f(T_c)$

Fig.3 Power dissipation per leg as function of case temperature,
 $P_{\text{tot}}=f(T_c)$

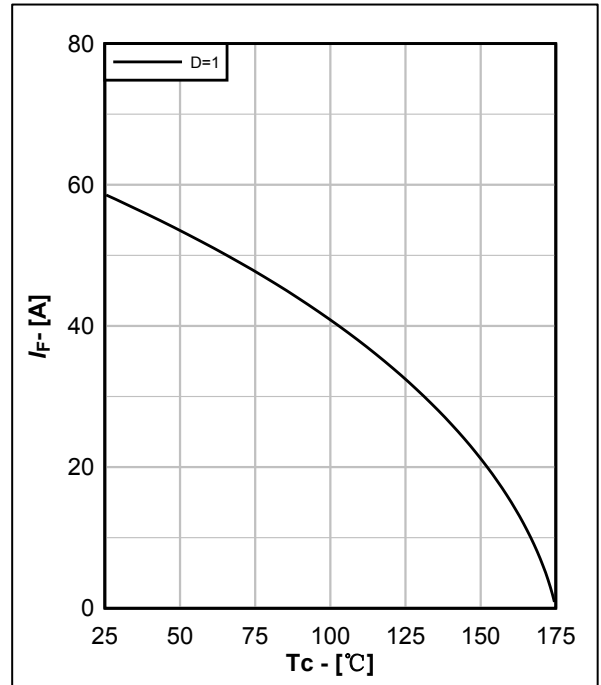


图 4. 不同负载下的电流曲线, $I_F = f(T_c)$

Fig.4 Diode forward current per leg as function
of temperature, $I_F = f(T_c)$

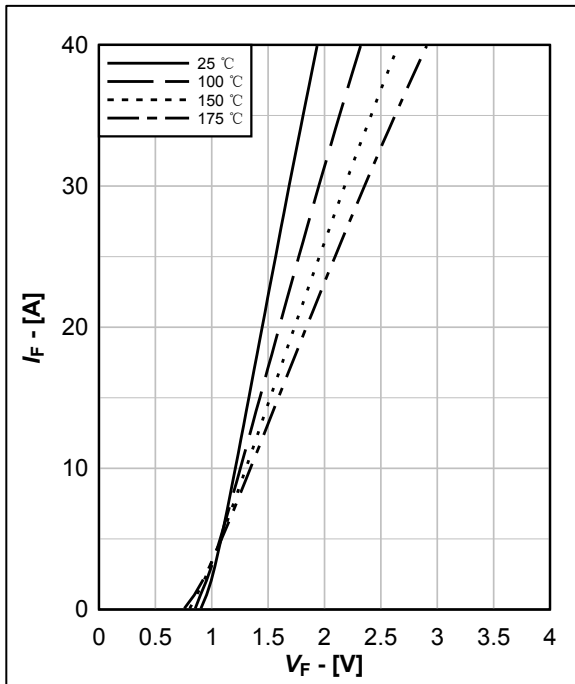


图 5. 典型正向特性曲线, $I_F=f(V_F)$

Fig.5 Typical forward characteristics per leg, $I_F=f(V_F)$

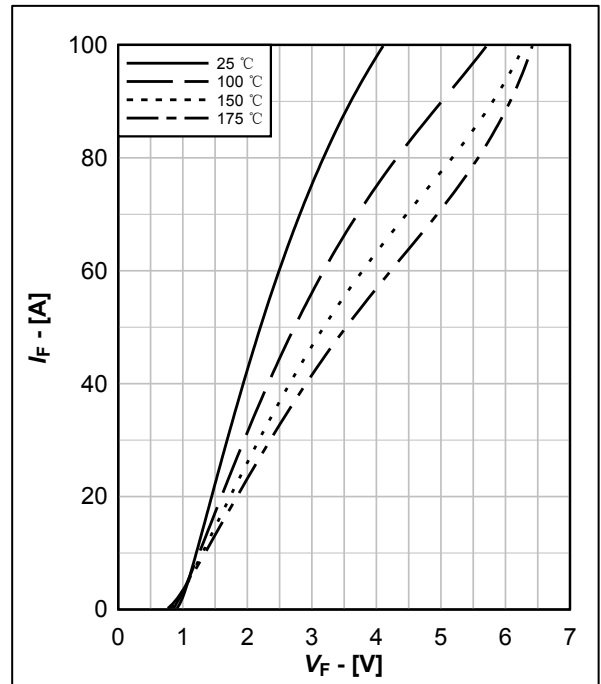


图 6. 典型正向特性曲线, $I_F = f(V_F)$

Fig.6 Typical forward characteristics per leg, $I_F=f(V_F)$

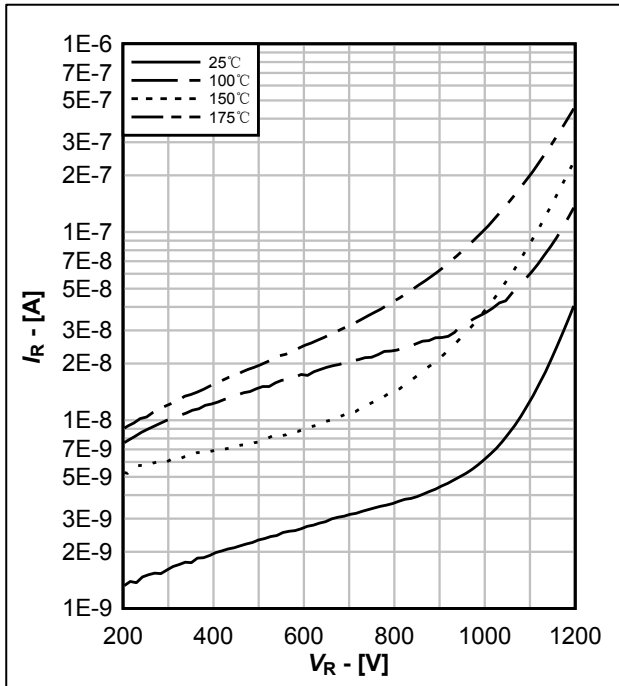


图 7. 典型反向特性曲线, $I_R = f(V_R)$

Fig.7 Typical IGBT output characteristics, $I_R = f(V_R)$

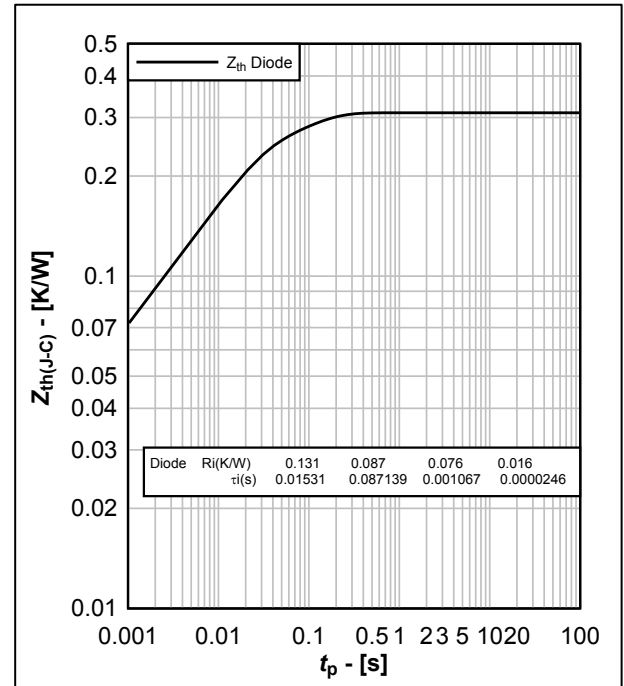


图 8. 瞬态热阻抗曲线, $Z_{th(j-c)} = f(t_p)$

Fig.8 Transient thermal impedance, $Z_{th(j-c)} = f(t_p)$

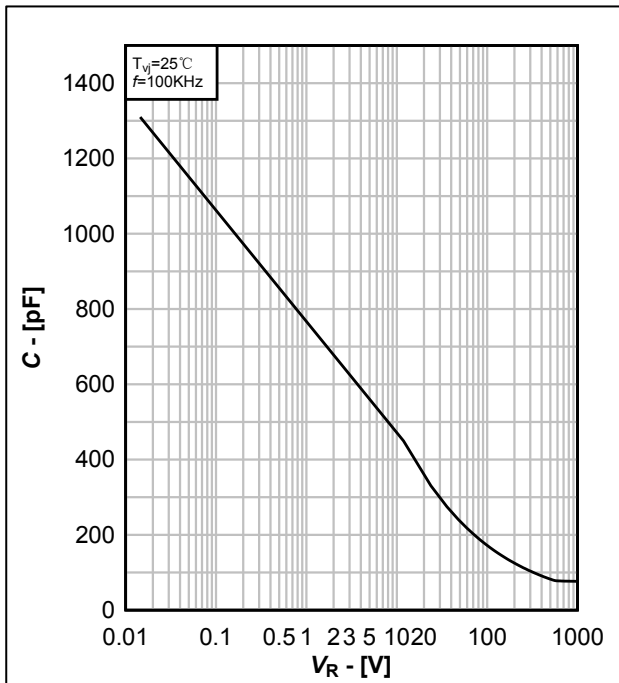


图 9. 典型电容与反向电压曲线, $C = f(V_R)$

Fig.9 Typical capacitance per leg as function of reverse voltage, $C = f(V_R)$

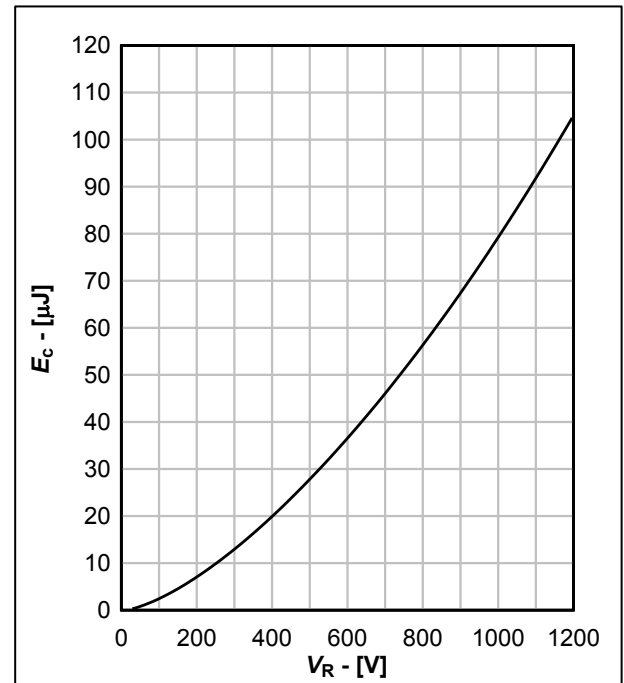
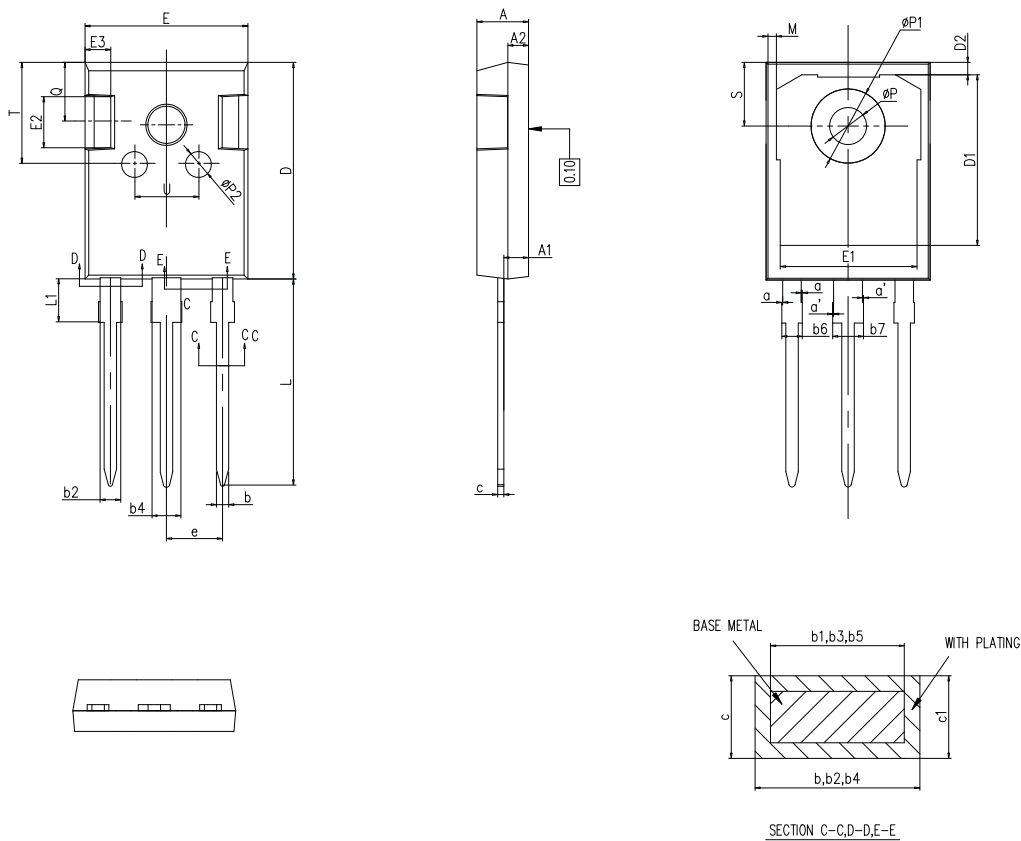


图 10. 典型电容能量与反向电压曲线, $E_c = f(V_R)$

Fig.10 Typical capacitively stored energy as function of reverse voltage, per leg, $E_c = f(V_R)$



SYMBOL	mm		
	MIN	NOM	MAX
A	4.80	5.00	5.20
A1	2.21	2.41	2.59
A2	1.85	2.00	2.15
a	0	-	0.15
a'	0	-	0.15
b	1.11	-	1.36
b1	1.15	1.20	1.25
b2	1.91	-	2.21
b3	1.95	2.00	2.02
b4	2.96	-	3.06
b5	2.95	3.00	3.02
b6	-	-	2.25
b7	-	-	3.25
c	0.51	-	0.75
c1	0.58	0.60	0.62
D	20.70	21.00	21.30
D1	16.25	16.55	16.85
D2	1.05	1.20	1.35
E	15.50	15.80	16.10
E1	13.00	13.30	13.60
E2	4.80	5.00	5.20
E3	2.30	2.50	2.70
e	5.34	5.44	5.54
L	19.62	19.92	20.22
L1	3.93	-	4.46
M	0.35	-	0.95
P	3.40	3.60	3.80
P1	7.00	-	7.40
P2	2.40	2.50	2.60
Q	5.60	-	6.00
S	6.05	6.15	6.25
T	9.80	-	10.20
U	6.00	-	6.40

图 14. 封装尺寸

Fig. 14 Package Dimensions

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