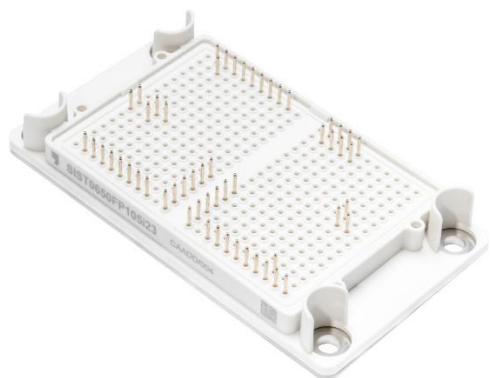


DATASHEET 规格书

SIST0650FP105i23

FP-Type three-level IGBT module

FP 封装半桥 IGBT 模块



$V_{CE} = 1050 \text{ V}$

$I_C = 2 \times 650 \text{ A}$

- i23 ultra-low loss micro pattern Trench IGBT chip-set
i23 超低损耗精细沟槽栅型 IGBT 芯片组
- Baseplate isolation with efficient Al_2O_3 ceramic
高效 Al_2O_3 绝缘陶瓷基板
- Cu baseplate for low thermal resistance
低热阻铜底板
- Industry standard package
行业标准封装

For solar power and 3-level-applications

Maximum ratings¹ 最大额定值¹

PARAMETER 参数	SYMBOL 符号	CONDITIONS 工作条件	MIN 最小值	MAX 最大值	UNIT 单位
Collector-emitter voltage 集电极-发射极电压	V_{CES}	$V_{GE} = 0 \text{ V}$, $T_{vj} = 25 \text{ }^\circ\text{C}$		1050	V
Implemented DC collector current T1-T4 集电极直流电流	I_{CN}			650	A
Collector current T1-T4	I_C	$T_C = 110 \text{ }^\circ\text{C}$, $T_{vj} = 175 \text{ }^\circ\text{C}$		450	A
Peak collector current 集电极峰值电流	I_{CM}	$t_p = 1 \text{ ms}$		1300	A
Gate-emitter voltage 栅极-发射极驱动电压	V_{GES}		-20	20	V
Implemented DC forward current (D5, D6) 二极管直流正向电流	I_{FN}			400	A
Continuous forward current (D5, D6)	I_F	$T_C = 65 \text{ }^\circ\text{C}$		320	A
Peak forward current (D5, D6) 二极管最大脉冲正向电流	I_{FRM}	$t_p = 1 \text{ ms}$		800	A
Isolation voltage 绝缘电压	V_{isol}	1 min, $f = 50 \text{ Hz}$		3200	V
Junction operating temperature 运行结温	$T_{vj(op)}$		-40	175	$^\circ\text{C}$
Case temperature 壳温	T_C		-40	125	$^\circ\text{C}$
Storage temperature 存储温度	T_{stg}		-40	125	$^\circ\text{C}$
Mounting torques 紧固力矩 ²	M_S	Base-heatsink, M5 screws	3	5	Nm



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¹ Maximum rated values indicate limits beyond which damage to the device may occur per IEC 60747; 根据标准 IEC 60747 要求, 最大额定值表示超过该限值可能会对器件造成损坏

² For details, please refer to the mounting instructions. 详细信息, 请参考安装说明书

IGBT³ T1, T4

PARAMETER 参数	SYMBOL 符号	CONDITIONS 工作条件	MIN 最小值	TYP 典型	MAX 最大值	UNIT 单位
Collector(-emitter) breakdown voltage 集电极-发射极击穿电压	$V_{(BR)CES}$	$V_{GE} = 0 \text{ V}$, $I_C = 10 \text{ mA}$, $T_{vj} = 25^\circ\text{C}$	1050			V
Collector-emitter saturation voltage⁴ 集电极-发射极饱和电压	V_{CESat}	$I_C = 600 \text{ A}$, $V_{GE} = 15 \text{ V}$	$T_{vj} = 25^\circ\text{C}$	1.65	2	V
			$T_{vj} = 150^\circ\text{C}$	2.05		V
			$T_{vj} = 175^\circ\text{C}$	2.1		V
Collector cut-off current 集电极截止电流	I_{CES}	$V_{CE} = 1050 \text{ V}$, $V_{GE} = 0 \text{ V}$	$T_{vj} = 25^\circ\text{C}$		1	mA
			$T_{vj} = 125^\circ\text{C}$	1		mA
			$T_{vj} = 175^\circ\text{C}$	15		mA
Gate leakage current 栅极漏电流	I_{GES}	$V_{CE} = 0 \text{ V}$, $V_{GE} = \pm 20 \text{ V}$	-0.5		0.5	μA
Gate-emitter threshold voltage 栅极-发射极阈值电压	$V_{GE(th)}$	$I_C = 12 \text{ mA}$, $V_{CE} = V_{GE}$, $T_{vj} = 25^\circ\text{C}$	3.5		6	V
Gate charge 栅极电荷	Q_G	$I_C = 450 \text{ A}$, $V_{CE} = 650 \text{ V}$, $V_{GE} = -15 \text{ V} \dots 15 \text{ V}$		3.1		μC
Input capacitance 输入电容	C_{ies}	$V_{CE} = 25 \text{ V}$, $V_{GE} = 0 \text{ V}$, $f = 100 \text{ kHz}$, $T_{vj} = 25^\circ\text{C}$		46		nF
Output capacitance 输出电容	C_{oes}			1.12		nF
Reverse transfer capacitance 反向传输电容	C_{res}			0.46		nF
Internal gate resistor 栅极内阻	R_{Gint}	Per switch				Ω
Turn-on delay time 开通延迟	$t_{d(on)}$	$V_{CC} = 650 \text{ V}$, $I_C = 200 \text{ A}$, $R_G = 2.5 \Omega$, $V_{GE} = -6/+15 \text{ V}$, $C_{GE} = 10 \text{ nF}$, $L_S = 17 \text{ nH}$, inductive load	$T_{vj} = 25^\circ\text{C}$	111		ns
			$T_{vj} = 150^\circ\text{C}$	114		ns
			$T_{vj} = 175^\circ\text{C}$	117		ns
Rise time 上升时间	t_r		$T_{vj} = 25^\circ\text{C}$	23		ns
			$T_{vj} = 150^\circ\text{C}$	25		ns
			$T_{vj} = 175^\circ\text{C}$	26		ns
Turn-off delay time 关断延迟	$t_{d(off)}$	$V_{CC} = 650 \text{ V}$, $I_C = 200 \text{ A}$, $R_G = 8.2 \Omega$, $V_{GE} = -6/+15 \text{ V}$, $C_{GE} = 10 \text{ nF}$, $L_S = 17 \text{ nH}$, inductive load	$T_{vj} = 25^\circ\text{C}$	1060		ns
			$T_{vj} = 150^\circ\text{C}$	1210		ns
			$T_{vj} = 175^\circ\text{C}$	1260		ns
Fall time 下降时间	t_f		$T_{vj} = 25^\circ\text{C}$	27		ns
			$T_{vj} = 150^\circ\text{C}$	63		ns
			$T_{vj} = 175^\circ\text{C}$	76		ns
Turn-on switching energy 开通损耗	E_{on}	$V_{CC} = 650 \text{ V}$, $I_C = 200 \text{ A}$, $R_G = 2.5 \Omega$, $V_{GE} = -6/+15 \text{ V}$, $C_{GE} = 10 \text{ nF}$, $L_S = 17 \text{ nH}$, inductive load	$T_{vj} = 25^\circ\text{C}$	9.3		mJ
			$T_{vj} = 150^\circ\text{C}$	16.5		mJ
			$T_{vj} = 175^\circ\text{C}$	19.1		mJ
Turn-off switching energy 关断损耗	E_{off}	$V_{CC} = 650 \text{ V}$, $I_C = 200 \text{ A}$, $R_G = 8.2 \Omega$, $V_{GE} = -6/+15 \text{ V}$, $C_{GE} = 10 \text{ nF}$, $L_S = 17 \text{ nH}$, inductive load	$T_{vj} = 25^\circ\text{C}$	16.8		mJ
			$T_{vj} = 150^\circ\text{C}$	21.6		mJ
			$T_{vj} = 175^\circ\text{C}$	22.8		mJ

³ Characteristic values according to IEC 60747-9

⁴ Collector-emitter saturation voltage is given at chip-level 集电极-发射极饱和电压

**IGBT⁵ T2, T3**

PARAMETER 参数	SYMBOL 符号	CONDITIONS 工作条件	MIN 最小值	TYP 典型	MAX 最大值	UNIT 单位
Collector(-emitter) breakdown voltage 集电极-发射极击穿电压	$V_{(BR)CES}$	$V_{GE} = 0\text{ V}$, $I_C = 10\text{ mA}$, $T_{vj} = 25^\circ\text{C}$	1050			V
Collector-emitter saturation voltage⁶ 集电极-发射极饱和电压	V_{CESat}	$I_C = 600\text{ A}$, $V_{GE} = 15\text{ V}$		1.65	2	V
		$T_{vj} = 150^\circ\text{C}$		2.05		V
		$T_{vj} = 175^\circ\text{C}$		2.1		V
Collector cut-off current 集电极截止电流	I_{CES}	$V_{CE} = 1050\text{ V}$, $V_{GE} = 0\text{ V}$			1	mA
		$T_{vj} = 125^\circ\text{C}$		1		mA
		$T_{vj} = 175^\circ\text{C}$		15		mA
Gate leakage current 栅极漏电流	I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = \pm 20\text{ V}$	-0.5		0.5	μA
Gate-emitter threshold voltage 栅极-发射极阈值电压	$V_{GE(th)}$	$I_C = 12\text{ mA}$, $V_{CE} = V_{GE}$, $T_{vj} = 25^\circ\text{C}$	3.5		6	V
Gate charge 栅极电荷	Q_G	$I_C = 450\text{ A}$, $V_{CE} = 650\text{ V}$, $V_{GE} = -15\text{ V} \dots 15\text{ V}$		3.1		μC
Input capacitance 输入电容	C_{ies}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 100\text{ kHz}$, $T_{vj} = 25^\circ\text{C}$		46		nF
Output capacitance 输出电容	C_{oes}			1.12		nF
Reverse transfer capacitance 反向传输电容	C_{res}			0.46		nF
Internal gate resistor 栅极内阻	R_{Gint}	Per switch				Ω
Turn-on delay time 开通延迟	$t_{d(on)}$	$V_{CC} = 650\text{ V}$, $I_C = 200\text{ A}$, $R_G = 2.5\ \Omega$, $V_{GE} = -6/+15\text{ V}$, $C_{GE} = 10\text{ nF}$, $L_S = 27\text{ nH}$, inductive load	$T_{vj} = 25^\circ\text{C}$	119		ns
			$T_{vj} = 150^\circ\text{C}$	119		ns
			$T_{vj} = 175^\circ\text{C}$	120		ns
Rise time 上升时间	t_r		$T_{vj} = 25^\circ\text{C}$	27		ns
			$T_{vj} = 15^\circ\text{C}$	31		ns
			$T_{vj} = 175^\circ\text{C}$	29		ns
Turn-off delay time 关断延迟	$t_{d(off)}$	$V_{CC} = 650\text{ V}$, $I_C = 200\text{ A}$, $R_G = 10\ \Omega$, $V_{GE} = -6/+15\text{ V}$, $C_{GE} = 10\text{ nF}$, $L_S = 27\text{ nH}$, inductive load	$T_{vj} = 25^\circ\text{C}$	1241		ns
			$T_{vj} = 150^\circ\text{C}$	1429		ns
			$T_{vj} = 175^\circ\text{C}$	1484		ns
Fall time 下降时间	t_f		$T_{vj} = 25^\circ\text{C}$	43		ns
			$T_{vj} = 150^\circ\text{C}$	67		ns
			$T_{vj} = 175^\circ\text{C}$	75		ns
Turn-on switching energy 开通损耗	E_{on}	$V_{CC} = 650\text{ V}$, $I_C = 200\text{ A}$, $R_G = 2.5\ \Omega$, $V_{GE} = -6/+15\text{ V}$, $C_{GE} = 10\text{ nF}$, $L_S = 27\text{ nH}$, inductive load	$T_{vj} = 25^\circ\text{C}$	8.1		mJ
			$T_{vj} = 150^\circ\text{C}$	10.6		mJ
			$T_{vj} = 175^\circ\text{C}$	11.8		mJ
Turn-off switching energy 关断损耗	E_{off}	$V_{CC} = 650\text{ V}$, $I_C = 200\text{ A}$, $R_G = 10\ \Omega$, $V_{GE} = -6/+15\text{ V}$, $C_{GE} = 10\text{ nF}$, $L_S = 27\text{ nH}$, inductive load	$T_{vj} = 25^\circ\text{C}$	19.5		mJ
			$T_{vj} = 150^\circ\text{C}$	24.7		mJ
			$T_{vj} = 175^\circ\text{C}$	26.2		mJ

⁵ Characteristic values according to IEC 60747-9⁶ Collector-emitter saturation voltage is given at chip-level 集电极-发射极饱和电压



Diode⁷ D1, D2, D3, D4

PARAMETER 参数	SYMBOL 符号	CONDITIONS 工作条件		MIN 最小值	TYP 典型	MAX 最大值	UNIT 单位
Forward voltage ⁸ 正向压降	V _F	I _F = 300 A	T _{Vj} = 25 °C		2.0	2.7	V
			T _{Vj} = 150 °C		2.15		V
			T _{Vj} = 175 °C		2.2		V
Peak reverse recovery current 反向恢复电流峰值	I _{RM}	V _R = 650 V, I _F = 200 A, di/dt = 5200 A/μs (175°C), R _G = 2.5 Ω, V _{GE} = -6/+15 V, C _{GE} = 10 nF, L _s = 27, inductive load	T _{Vj} = 25 °C		249		A
			T _{Vj} = 150 °C		278		A
			T _{Vj} = 175 °C		288		A
Recovery charge 恢复电荷	Q _{rr}		T _{Vj} = 25 °C		10		μC
			T _{Vj} = 150 °C		22		μC
			T _{Vj} = 175 °C		27		μC
Reverse recovery time 反向恢复时间	t _{rr}		T _{Vj} = 25 °C		105		ns
			T _{Vj} = 150 °C		188		ns
			T _{Vj} = 175 °C		211		ns
Reverse recovery energy 反向恢复能量	E _{rec}	T _{Vj} = 25 °C		4.1		mJ	
		T _{Vj} = 150 °C		9.3		mJ	
		T _{Vj} = 175 °C		11.3		mJ	

Diode⁹ D5, D6

PARAMETER 参数	SYMBOL 符号	CONDITIONS 工作条件		MIN 最小值	TYP 典型	MAX 最大值	UNIT 单位
Forward voltage ¹⁰ 正向压降	V _F	I _F = 400 A	T _{Vj} = 25 °C		2.0	2.7	V
			T _{Vj} = 150 °C		2.15		V
			T _{Vj} = 175 °C		2.2		V
Peak reverse recovery current 反向恢复电流峰值	I _{RM}	V _R = 650 V, I _F = 200 A, di/dt = 4300A/μs (175°C), R _G = 2.5 Ω, V _{GE} = -6/+15 V, C _{GE} = 10 nF, L _s = 17 nH, inductive load	T _{Vj} = 25 °C		271		A
			T _{Vj} = 150 °C		308		A
			T _{Vj} = 175 °C		313		A
Recovery charge 恢复电荷	Q _{rr}		T _{Vj} = 25 °C		11		μC
			T _{Vj} = 150 °C		25		μC
			T _{Vj} = 175 °C		31		μC
Reverse recovery time 反向恢复时间	t _{rr}		T _{Vj} = 25 °C		101		ns
			T _{Vj} = 150 °C		176		ns
			T _{Vj} = 175 °C		199		ns
Reverse recovery energy 反向恢复能量	E _{rec}		T _{Vj} = 25 °C		4		mJ
			T _{Vj} = 150 °C		10		mJ
			T _{Vj} = 175 °C		12		mJ

⁷ Characteristic values according to IEC 60747-2

⁸ Forward voltage is given at chip-level 正向压降是芯片两端的电压值。



NTC Thermistor

PARAMETER 参数	SYMBOL 符号	CONDITIONS 工作条件	MIN 最小值	TYP 典型	MAX 最大值	UNIT 单位
Rated resistance 额定电阻	R ₂₅	T _c = 25 °C		5		kΩ
R100	R ₁₀₀	T _c = 100 °C	468		518	Ω
B-value B 值	B _{25/50}	$R_2 = R_{25} \exp [B_{25/50}(1/T_2 - 1/(298.15K))]$		3375		K
B-value B 值	B _{25/100}	$R_2 = R_{25} \exp [B_{25/100}(1/T_2 - 1/(298.15K))]$		3433		K

Package properties 封装特性⁹

PARAMETER 参数	SYMBOL 符号	CONDITIONS 工作条件			MIN 最小值	TYP 典型	MAX 最大值	UNIT 单位
IGBT thermal resistance junction to case IGBT 结-壳热阻	R _{th(j-c)IGBT}	Per switch 每一个开关	T1, T4				0.074	K/W
			T2, T3				0.074	K/W
Diode thermal resistance junction to case 二极管结-壳热阻	R _{th(j-c)Diode}		D1-D4				0.178	K/W
			D5, D6				0.136	K/W
IGBT thermal resistance case to heatsink IGBT 壳到散热器热阻	R _{th(c-s)IGBT}	IGBT per switch IGBT 每一个开关	T1, T4			0.030		K/W
			T2, T3			0.030		K/W
Diode thermal resistance case to heatsink 二极管壳到散热器热阻	R _{th(c-s)Diode}	diode per switch 二极管每一个开关	D1-D4			0.045		K/W
			D5, D6			0.037		K/W
Comparative tracking index 相对漏电起痕指数	CTI				600			
Module stray inductance 模块自身杂散电感	L _{s Cin}	Inner commutation loop				7.7		nH
	L _{s Cout}	Outer commutation loop				4.5		nH
Resistance, terminal chip 端子到芯片之间的阻抗	R _{CC'+EE'} R _{AA'+CC'}	Per leg, T _c = 25°C	T1+T2				0.245	mΩ
			D5+T2				0.425	mΩ
			T3+D6				0.345	mΩ
			T3+T4				0.255	mΩ
			D1+D2				0.475	mΩ
			D3+D4				0.450	mΩ
Maximum RMS current per pin 最大端子电流	I _{Term RMS}					50		A

⁹ Package and mechanical properties according to IEC 60747-15



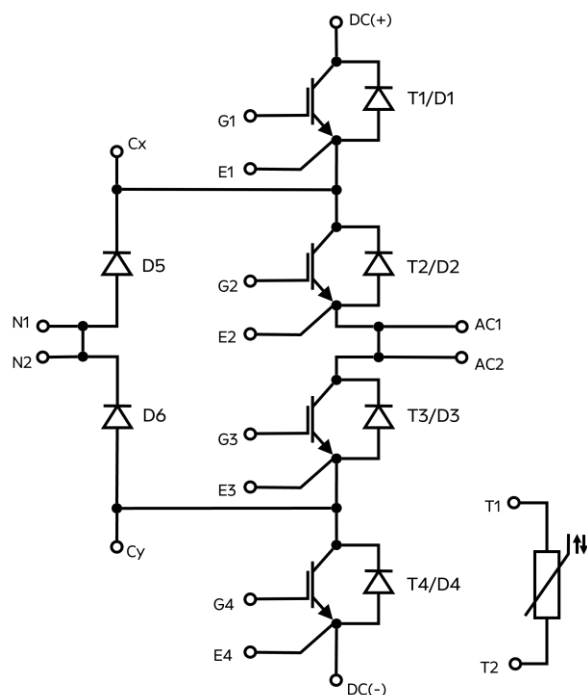
Mechanical properties 机械特性

PARAMETER 参数	SYMBOL 符号	CONDITIONS 工作条件		MIN 最小值	TYP 典型	MAX 最大值	UNIT 单位
Dimensions	L x W x H	Typical		113 x 62 x 17.3			mm ³
Clearance distance in air 电气间隙	d _a	According to IEC 60664-1 and EN 50124-1 参考标准 IEC 60664-1 和 EN 50124-1	Terminal to base: 端子到基板		15.7		mm
			Terminal to terminal: 端子到端子		5.4		mm
Surface creepage distance 爬电距离	d _s	According to IEC 60664-1 and EN 50124-1 参考标准 IEC 60664-1 和 EN 50124-1	Terminal to base: 端子到基板		17.5		mm
			Terminal to terminal: 端子到端子		5.4		mm
Mass 重量	m				250		g

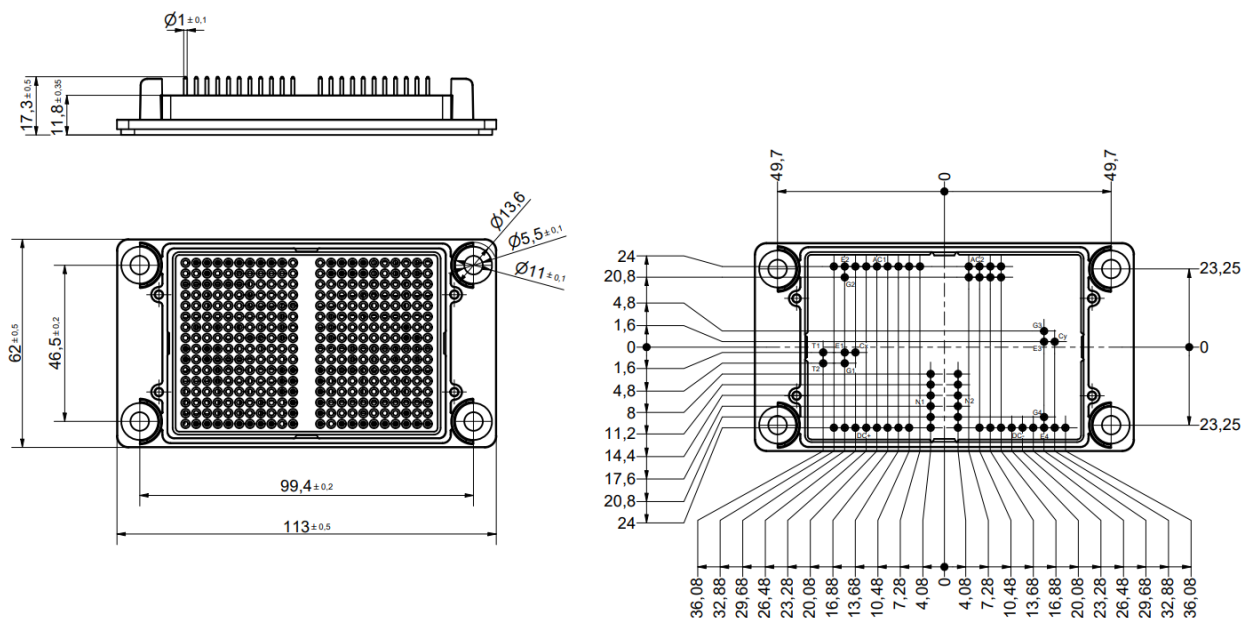
Ordering Information 订购信息

OPTION 选项	ARTICLE NUMBER 商品编号
Welded straight pins	SIST0650FP105i23
Soldered flexible pins	SIST0650FP105i23_A01

Electrical configuration 电气图



Outline drawing 外形图



This is an electrostatic sensitive device. 本产品对静电特别敏感.

This product has been designed and qualified for Industrial Level. 本产品的设计符合工业级标准。



Characteristics 特性曲线

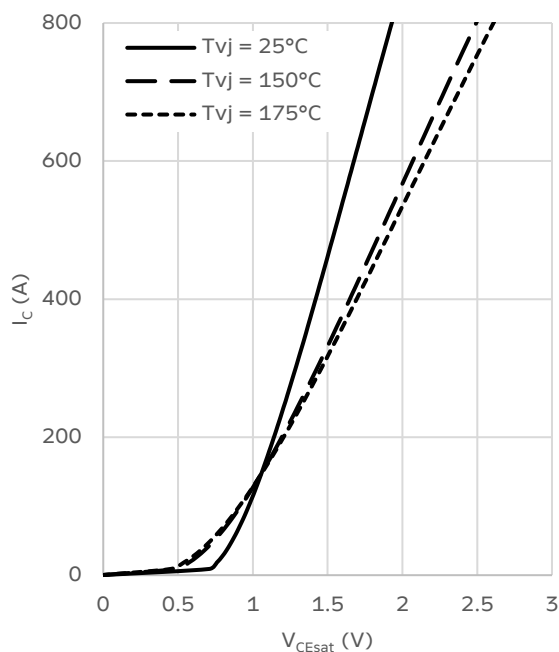
IGBT 1, 2, 3, 4

IGBT on-state characteristics T1 - T4 (typical)

IGBT 通态特性曲线 (典型)

$I_C = f(V_{CE})$

$V_{GE} = 15\text{ V}$

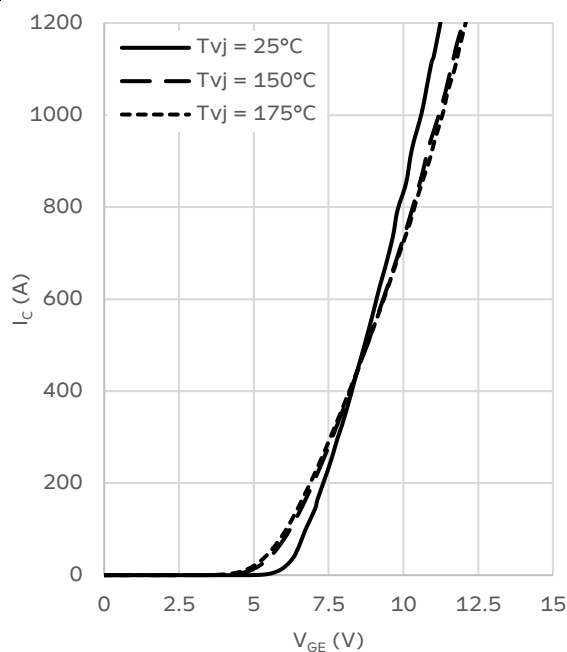


IGBT transfer characteristics T1 - T4 (typical)

IGBT 转移特性曲线 (典型)

$I_C = f(V_{GE})$

$V_{CE} = 20\text{ V}$

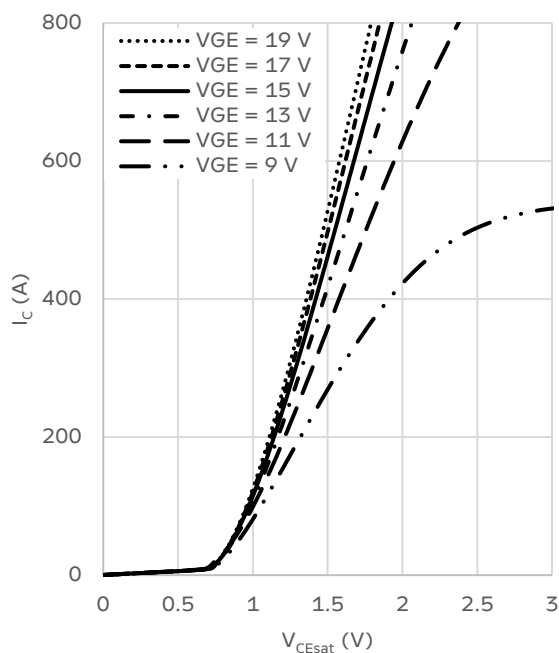


IGBT output characteristics T1 - T4 (typical)

IGBT 输出特性曲线 (典型)

$I_C = f(V_{CE})$

$T_{vj} = 25^\circ\text{C}$

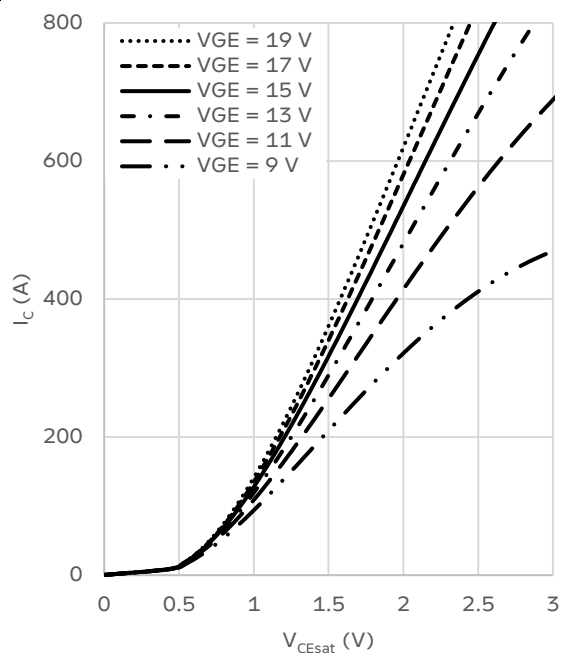


IGBT output characteristics T1 - T4 (typical)

IGBT 输出特性曲线 (典型)

$I_C = f(V_{CE})$

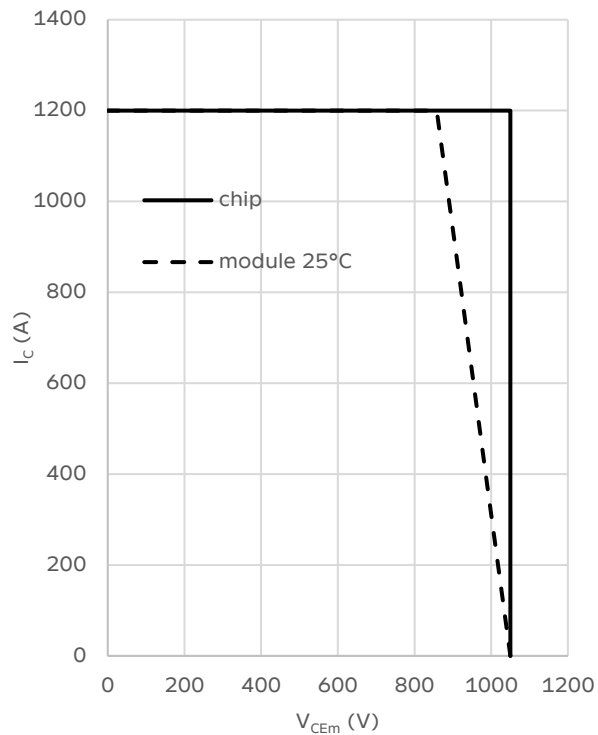
$T_{vj} = 175^\circ\text{C}$





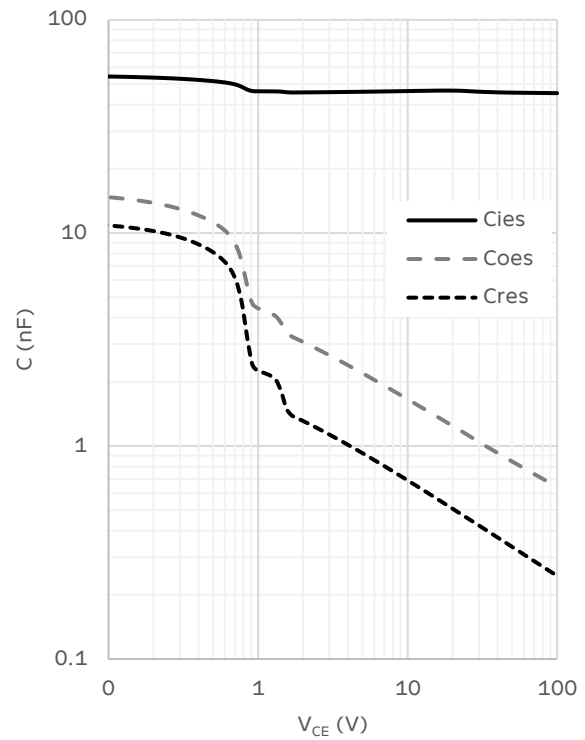
IGBT RBSOA
IGBT 反偏安全工作区域

$I_C = f(V_{CEM})$
 $R_{Goff} > 10 \Omega$, $V_{GE} = -6/+15 \text{ V}$



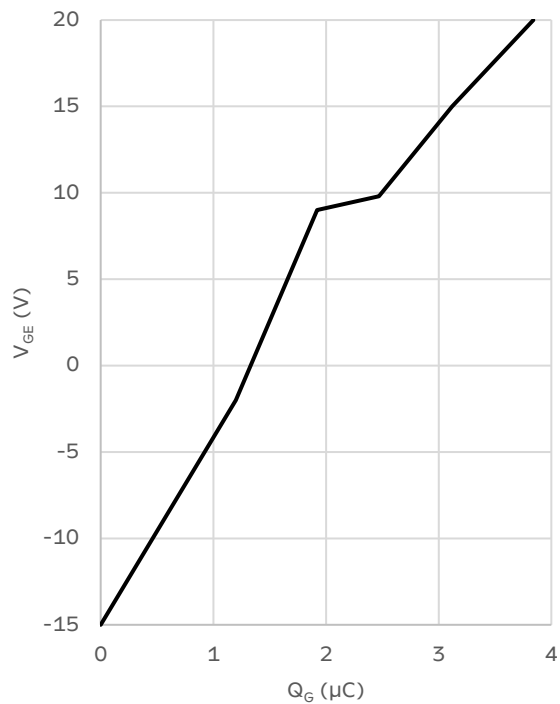
Capacitance characteristics (typical)

电容特性曲线 (典型)
 $C = f(V_{CE})$, $T_{vj} = 25^\circ\text{C}$
 $f = 100 \text{ kHz}$, $V_{GE} = 0 \text{ V}$



IGBT gate charge (typical)

$V_{GE} = f(Q_G)$, $T_{vj} = 25^\circ\text{C}$
 $V_{CE} = 650 \text{ V}$, $I_C = 450 \text{ A}$



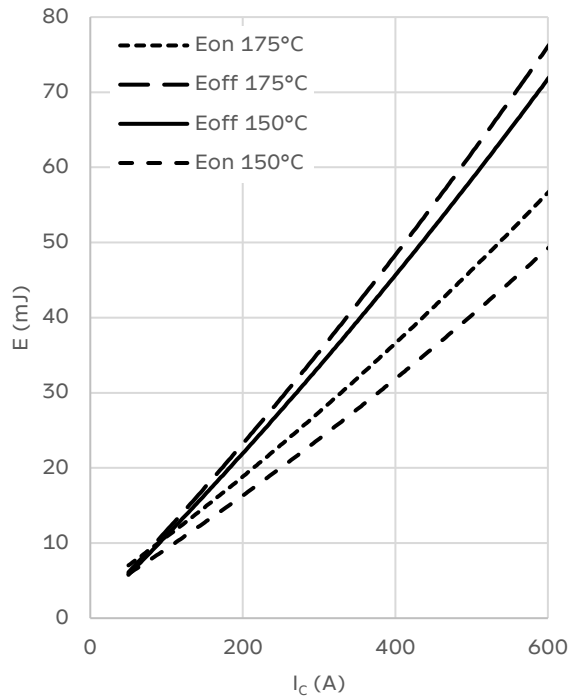
IGBT 1 / 4

IGBT switching losses T1, T4 (typical)

IGBT 开关损耗曲线 (典型)

$$E = f(I_{CE})$$

$$V_{CE} = 650 \text{ V}, R_{Gon} = 2.5 \text{ } \Omega, R_{Goff} = 8.2 \text{ } \Omega, V_{GE} = -6/+15 \text{ V}$$

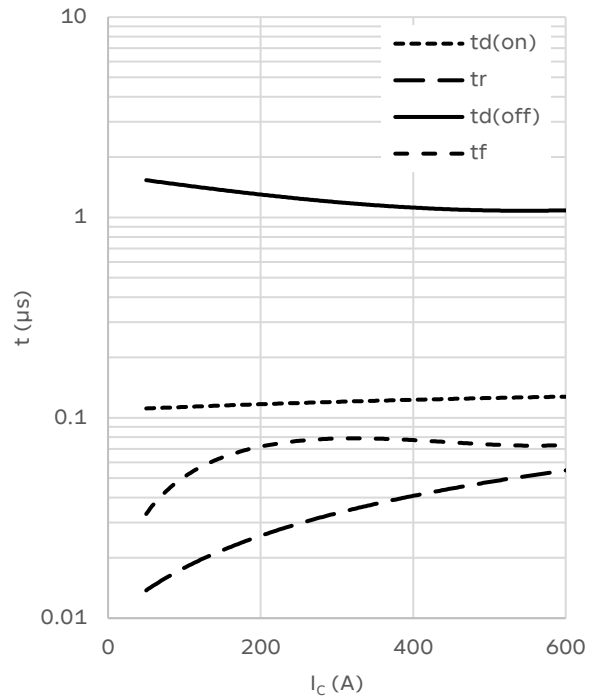


IGBT switching times T1, T4 (typical)

IGBT 开关时间曲线 (典型)

$$t = f(I_{CE}), T_{vj} = 175 \text{ } ^\circ\text{C}$$

$$V_{CE} = 650 \text{ V}, R_{Gon} = 2.5 \text{ } \Omega, R_{Goff} = 8.2 \text{ } \Omega, V_{GE} = -6/+15 \text{ V}$$

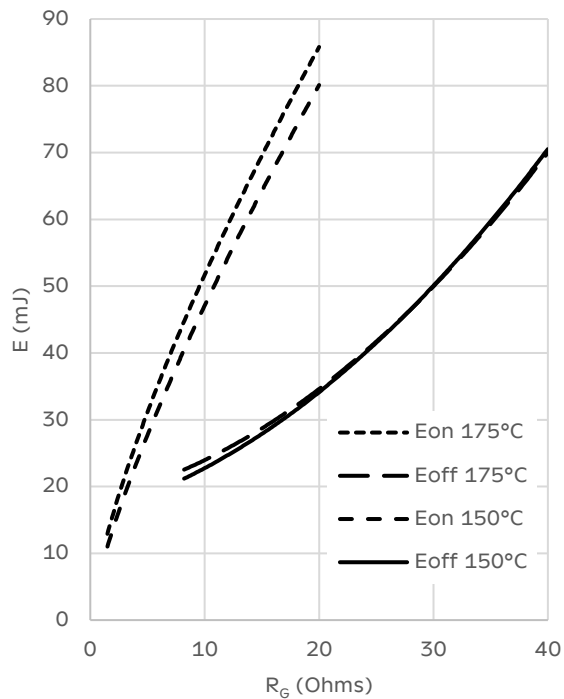


IGBT switching losses T1, T4 (typical)

IGBT 开关损耗曲线 (典型)

$$E = f(R_G)$$

$$V_{CE} = 650 \text{ V}, I_C = 200 \text{ A}, V_{GE} = -6/+15 \text{ V}$$

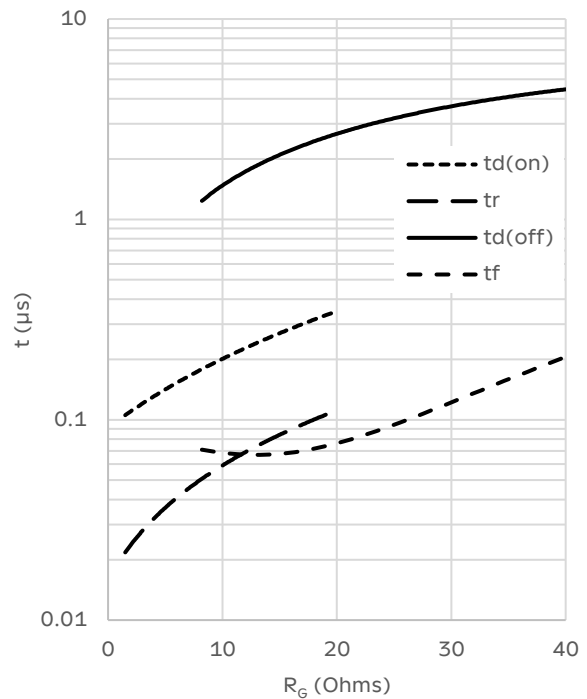


IGBT switching times T1, T4 (typical)

IGBT 开关时间曲线 (典型)

$$t = f(R_G), T_{vj} = 175 \text{ } ^\circ\text{C}$$

$$V_{CE} = 650 \text{ V}, I_C = 200 \text{ A}, V_{GE} = -6/+15 \text{ V}$$



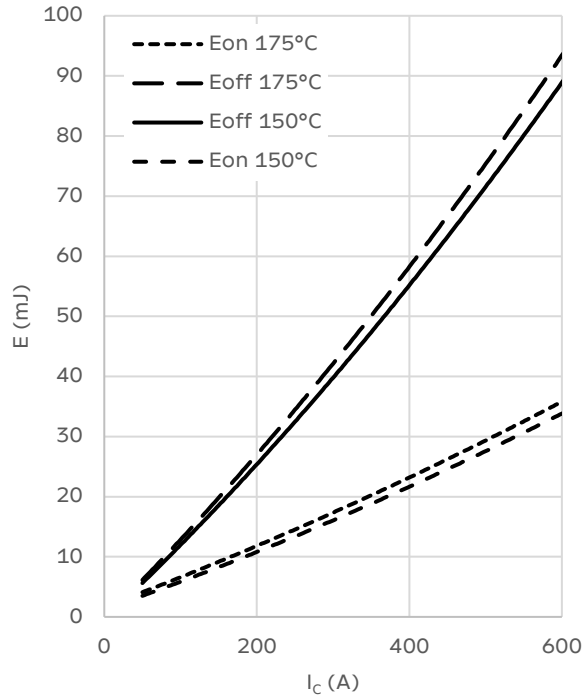
IGBT 2 / 3

IGBT switching losses T2, T3 (typical)

IGBT 开关损耗曲线 (典型)

$$E = f(I_{CE})$$

$$V_{CE} = 650 \text{ V}, R_{Gon} = 2.5 \text{ } \Omega, R_{Goff} = 10 \text{ } \Omega, V_{GE} = -6/+15 \text{ V}$$

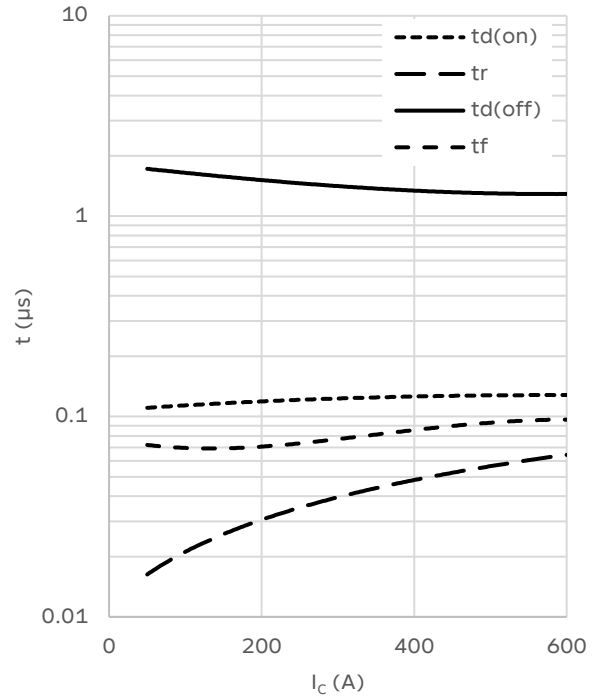


IGBT switching times T2, T3 (typical)

IGBT 开关时间曲线 (典型)

$$t = f(I_{CE}), T_{vj} = 175 \text{ } ^\circ\text{C}$$

$$V_{CE} = 650 \text{ V}, R_{Gon} = 2.5 \text{ } \Omega, R_{Goff} = 10 \text{ } \Omega, V_{GE} = -6/+15 \text{ V}$$

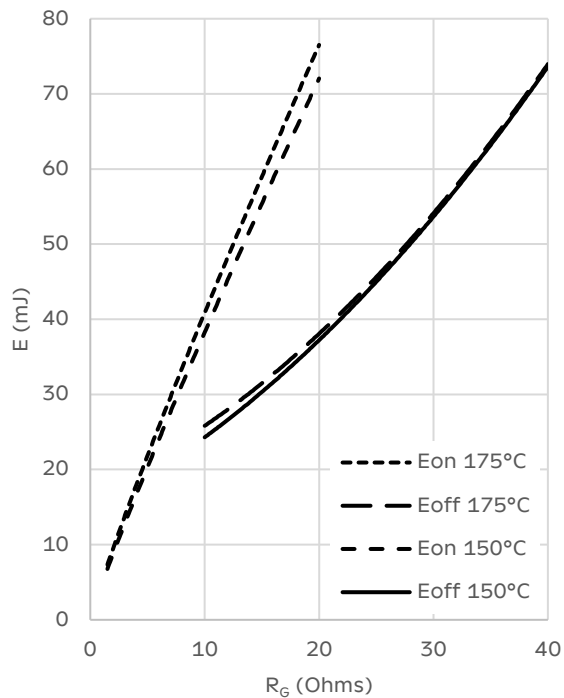


IGBT switching losses T2, T3 (typical)

IGBT 开关损耗曲线 (典型)

$$E = f(R_G)$$

$$V_{CE} = 650 \text{ V}, I_C = 200 \text{ A}, V_{GE} = -6/+15 \text{ V}$$

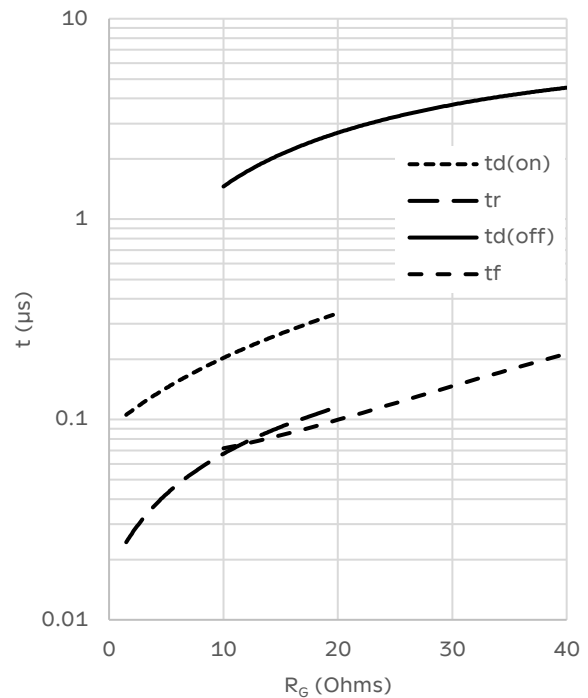


IGBT switching times T2, T3 (typical)

IGBT 开关时间曲线 (典型)

$$t = f(R_G), T_{vj} = 175 \text{ } ^\circ\text{C}$$

$$V_{CE} = 650 \text{ V}, I_C = 200 \text{ A}, V_{GE} = -6/+15 \text{ V}$$



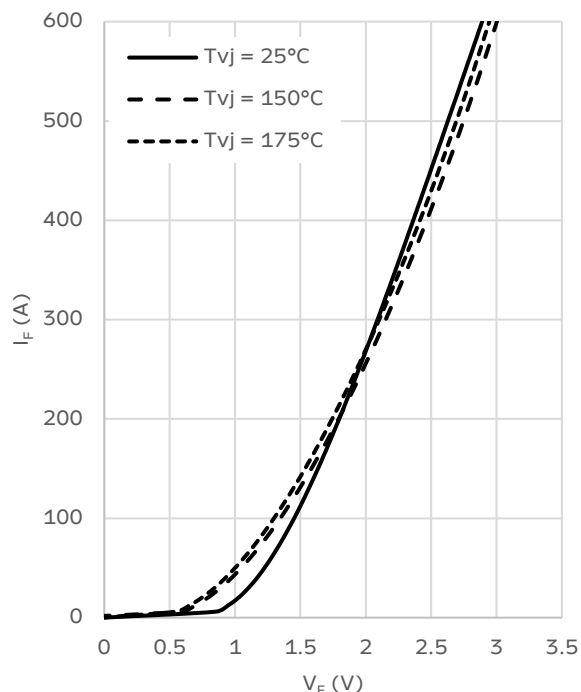


Diode 1 –4

Diode forward characteristic D1, D2, D3, D4 (typical)

二极管正向特性（典型）

$$I_F = f(V_F)$$

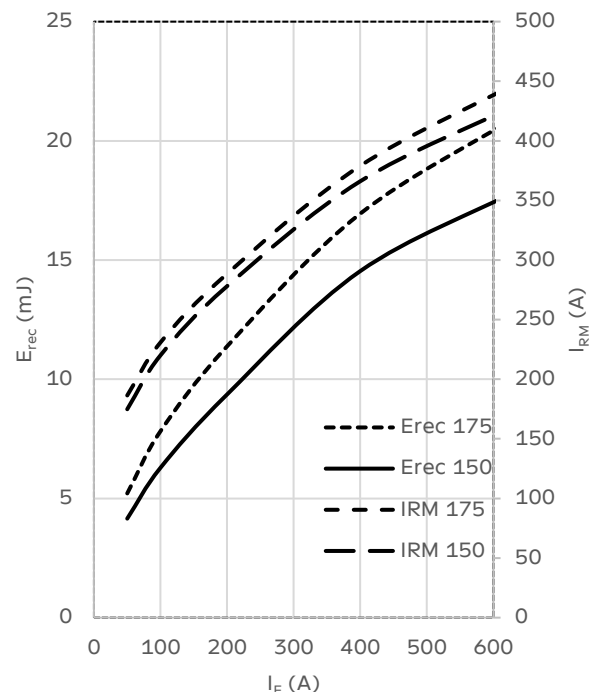


Diode switching characteristics D1, D2, D3, D4 (typical)

二极管开关特性（典型）

$$E_{rec} = f(I_F), I_{RM} = f(I_F)$$

$$V_{DC} = 650 \text{ V}, R_{Gon} = 2.5 \Omega \text{ (IGBT)}, V_{GE} = -6/+15 \text{ V (IGBT)}$$

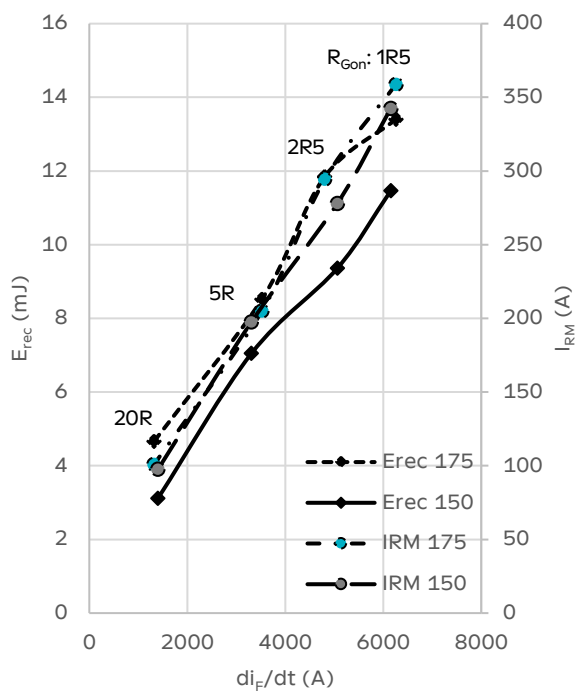


Diode switching characteristics D1, D2, D3, D4 (typical)

二极管开关特性（典型）

$$E_{rec} = f(di/dt), I_{RM} = f(di/dt)$$

$$V_{DC} = 650 \text{ V}, I_F = 200 \text{ A}, V_{GE} = -6/+15 \text{ V (IGBT)}$$

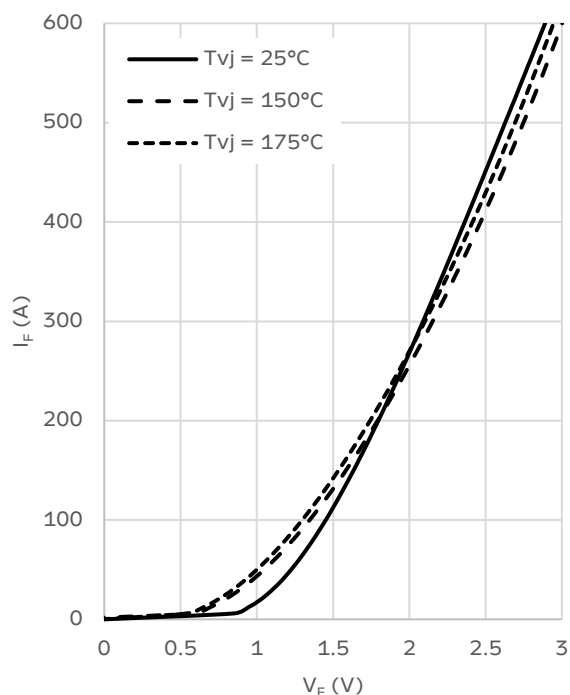


Diode 5 / 6

Diode forward characteristic D5, D6 (typical)

二极管正向特性（典型）

$$I_F = f(V_F)$$

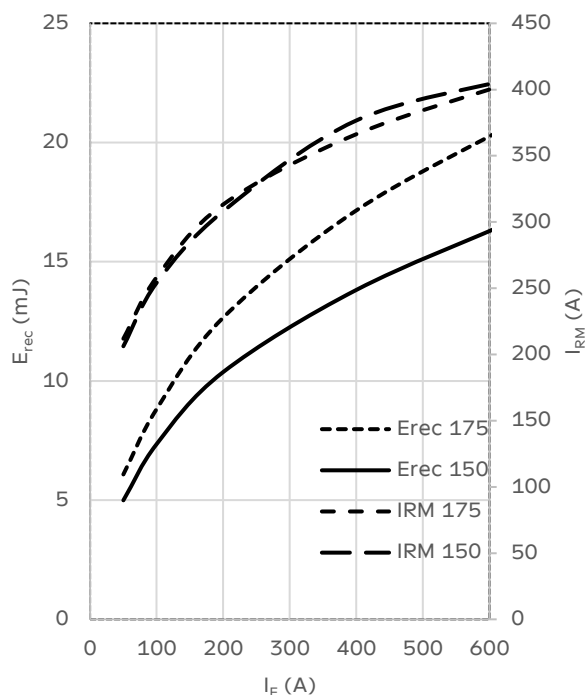


Diode switching characteristics D5, D6 (typical)

二极管开关特性（典型）

$$E_{rec} = f(I_F), I_{RM} = f(I_F)$$

$$V_{DC} = 650 \text{ V}, R_{Gon} = 2.5 \Omega \text{ (IGBT)}, V_{GE} = -6/+15 \text{ V (IGBT)}$$

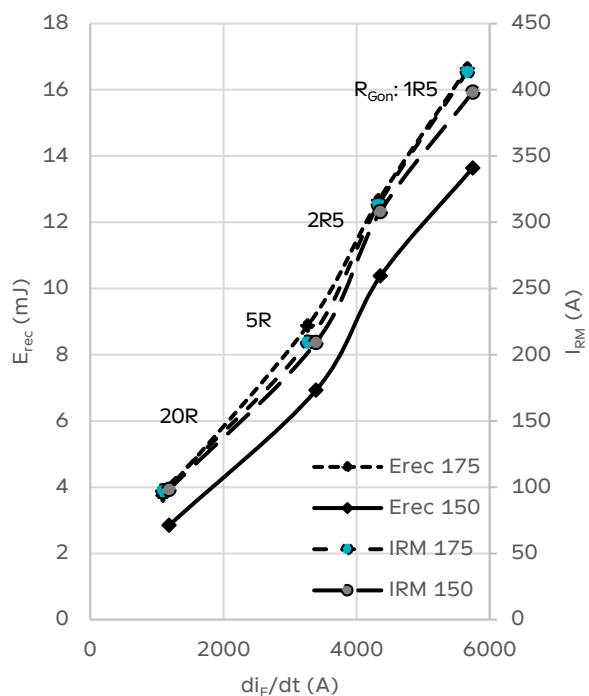


Diode switching characteristics D5, D6 (typical)

二极管开关特性（典型）

$$E_{rec} = f(di_F/dt), I_{RM} = f(di_F/dt)$$

$$V_{DC} = 650 \text{ V}, I_F = 200 \text{ A}, V_{GE} = -6/+15 \text{ V (IGBT)}$$





Revision History 修订历史

Release 发布	Version 版本	Description 描述
2026-07-30	v3.0	Final Datasheet
2026-09-01	v4.0	QG graph added