Features：

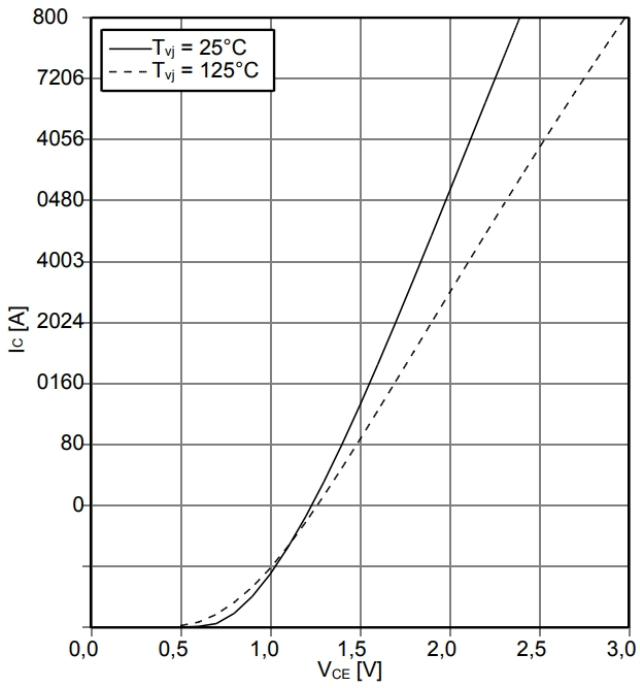
- **n** 10μs short circuit capability
- **n** 1200V NPT technology
- **n** Low switching losses
- **n** $V_{CE(sat)}$ with positive temperature coefficient
- **n** Fast &soft reverse recovery anti-parallel FWD

Typical Applications：

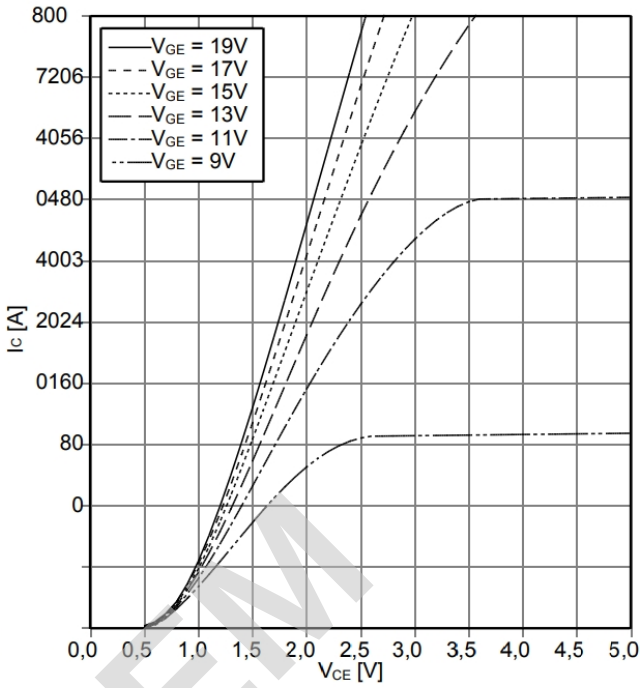
- **n** SMPS
- **n** Inductive heating
- **n** Electronic welder

SYMBOL	CHARACTERISTIC	TEST CONDITIONS		VALUE			UNIT
				Min	Type	Max	
V_{CES}	Collector-Emitter voltage	T_j=25°C				1200	V
V_{GES}	Gate-Emitter voltage	T_j=25°C				±20	V
I_C	Collector current	T_c=100°C				450	A
I_{CM}	Repetitive peak collector current	t_P=1ms				800	A
T_j	Junction temperature	/				150	℃
T_{stg}	Storage temperature	/		-40		150	℃
V_{iso}	Isolation between terminal and copper base	T_j=25°C , AC：1minute		3000			V
I_{CES}	Zero gate voltage collector current	T_j=25°C ,V_{CE}=1200V，V_{GE}=0V				5	mA
I_{GES}	Gate-Emitter leakage current	T_j=25°C ,V_{CE}=0V，V_{GE}=±20V		-0.4		0.4	μA
BV_{CES}		V_{GE}=0V, I_C=4mA		1250			V
$V_{GE(th)}$	Gate-Emitter threshold voltage	T_j=25°C ,V_{CE}=20V，I_C=4mA		5.0	5.6	7.0	V
$V_{CE(sat)}$	Collector-Emitter saturation voltage	T_j=25°C ,V_{GE}=15V，I_C=450A			2.1	2.5	V
R_{Gint}	Integrated gate resistor				3		Ω
Q_g	Gate Charge	T_j=25°C, V_{CE}=600V, Ic=450A, V_{GE}=±15V			2.8		μC
C_{ies}	Input capacitance	T_j=25°C ,V_{CE}=25V，V_{GE}=0V，f=1MHz			36		nF
C_{Oes}	Output capacitance				0.7		
C_{res}	Reverse transfer capacitance				0.8		nF
$t_{d(on)}$	Turn-on time	V_{CC}=600V，I_C=450A，V_{GE}=±15V，R_g=3Ω，Inductive load	T_j=25°C		38		ns
			T_j=125°C		42		ns
t_r			T_j=25°C		45		ns
			T_j=125°C		53		ns
$t_{d(off)}$	Turn-off time		T_j=25°C		240		ns
			T_j=125°C		470		ns
t_f			T_j=25°C		170		ns
			T_j=125°C		260		ns
t_{sc}	Short circuit withstand time	V_{GE}=15V, V_{CC}=600V			10		μs
V_F	Forward on voltage	T_j=25°C ,I_F=450A			2.0	2.3	V
		T_j=125°C ,I_F=450A			2.0		V
I_{RRM}	Max reverse recovery current	T_j=125°C ,I_F=450A,V_R=600V			450		A
I_{FRM}	Repetitive peak forward current				700		
t_{rr}	Diode reverse recovery time	I_F=450A, V_R=600V di$_F$/dt=-1600A/μs T_j=125°C			350		ns
$R_{th(j-c)}$	Thermal resistance(per chip)	IGBT			0.06	0.09	℃/W
		FWD			0.4		℃/W
W_t	Weight					340	g
Outline	454H3P						

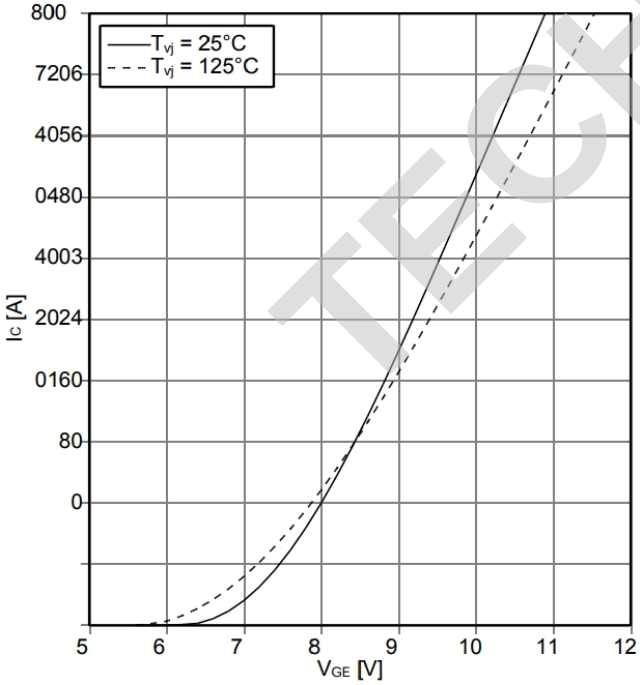
output characteristic IGBT,Inverter (typical)
$I_C = f(V_{CE})$
V_{GE} = 15 V



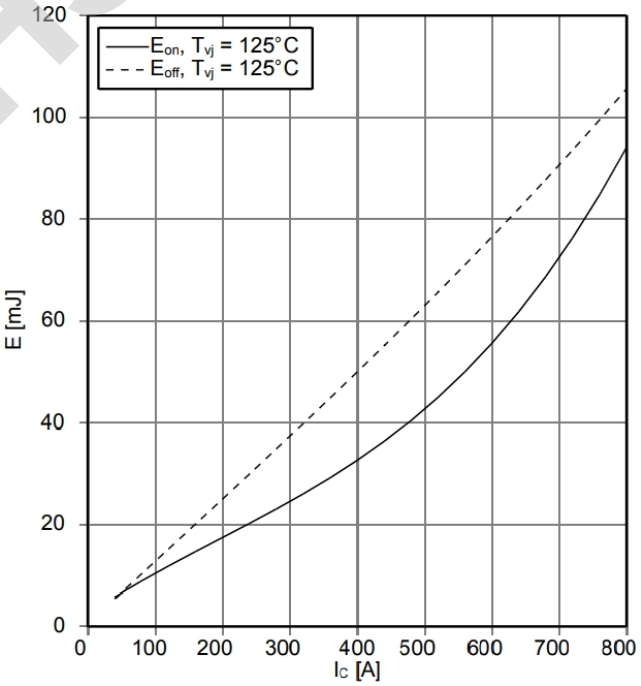
output characteristic IGBT,Inverter (typical)
$I_C = f(V_{CE})$
T_{vj} = 125°C



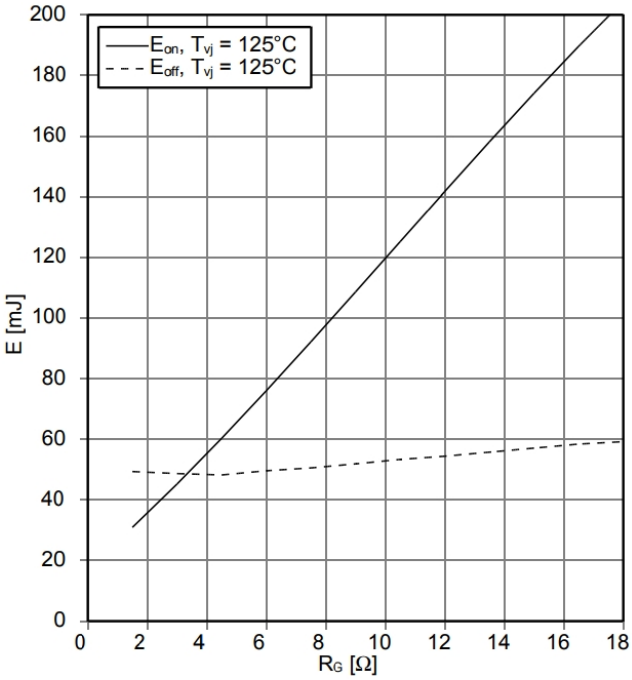
transfer characteristic IGBT,Inverter(typical)
$I_C = f(V_{GE})$
V_{CE} = 20 V



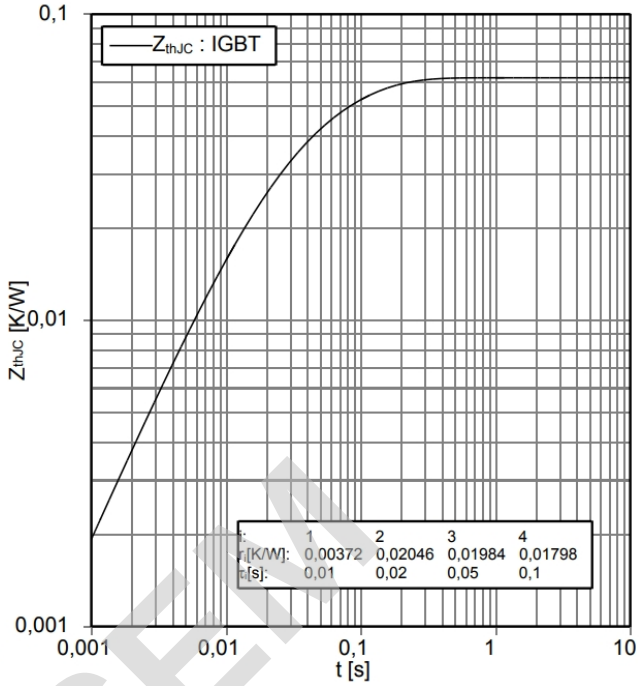
$E_{on} = f(I_C)$, $E_{off} = f(I_C)$
V_{GE} = ±15 V, R_{Gon} = 1.8 Ω, R_{Goff} = 1.8 Ω, V_{CE} = 600 V



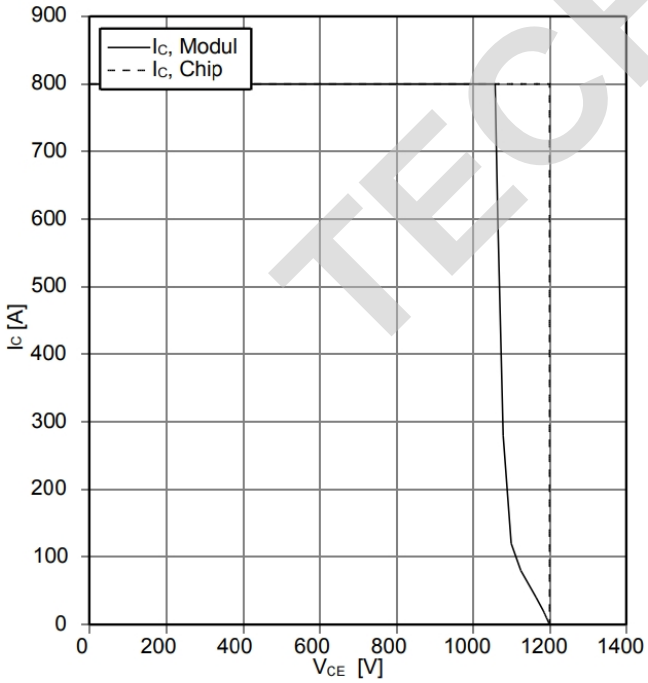
switching losses IGBT,Inverter (typical)
$E_{on} = f(R_G)$, $E_{off} = f(R_G)$
$V_{GE} = \pm 15$ V, $I_C = 400$ A, $V_{CE} = 600$ V



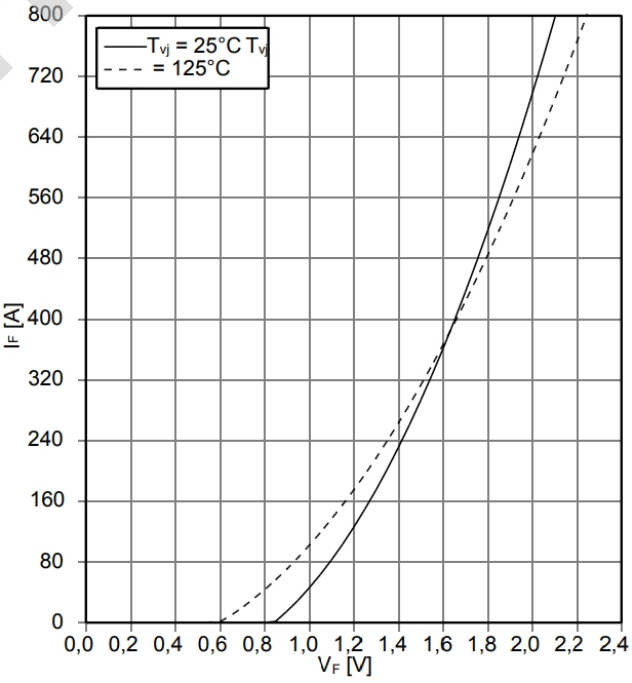
transient thermal impedance IGBT,Inverter
$Z_{thJC} = f(t)$



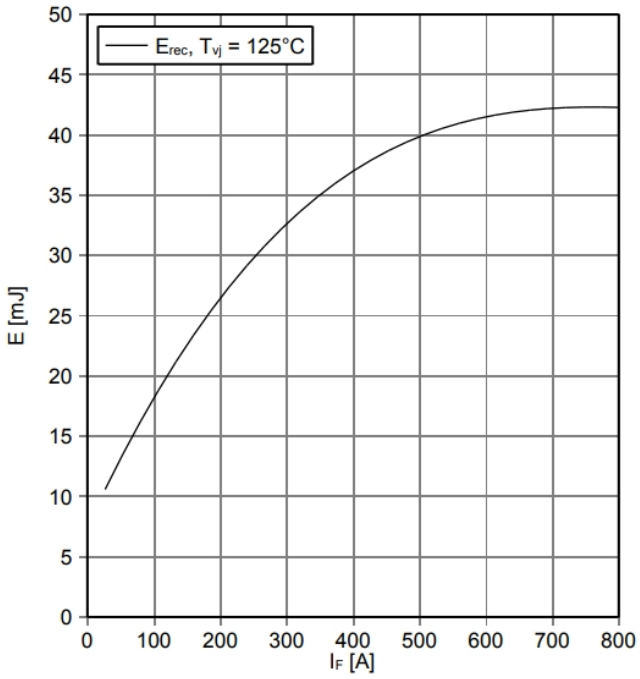
reverse bias safe operating area IGBT,Inverter (RBSOA)
$I_C = f(V_{CE})$
$V_{GE} = \pm 15$ V, $R_{Goff} = 1.8\ \Omega$, $T_{vj} = 125°C$



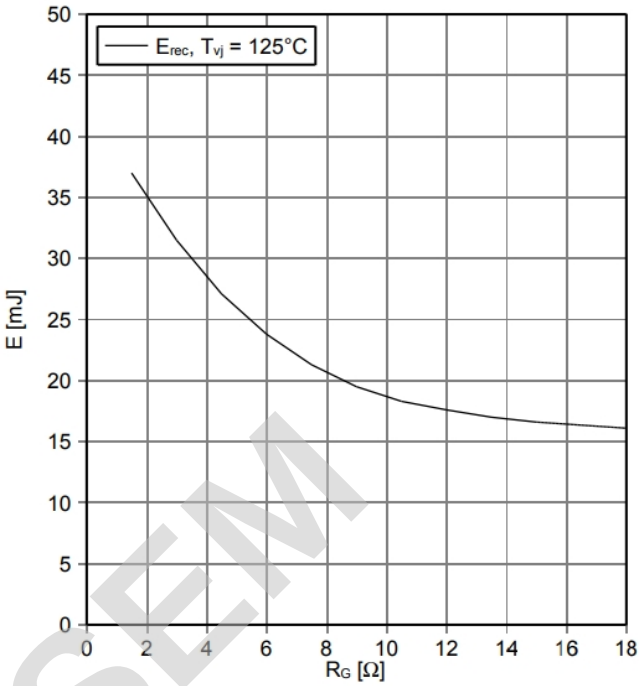
forward characteristic of Diode, Inverter (typical)
$I_F = f(V_F)$



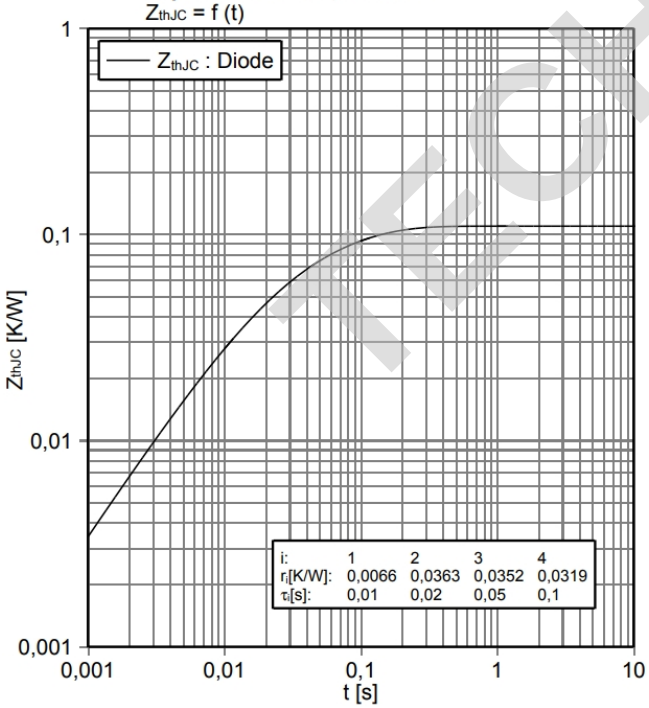
switching losses Diode, Inverter (typical)
$E_{rec} = f(I_F)$
$R_{Gon} = 1.8\ \Omega$, $V_{CE} = 600$ V



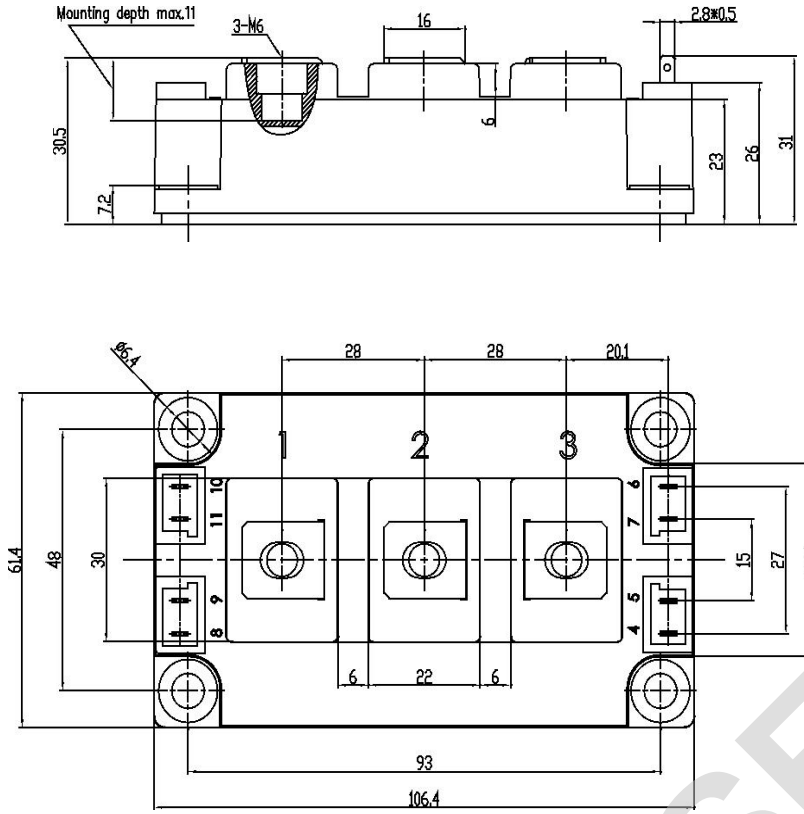
switching losses Diode, Inverter (typical)
$E_{rec} = f(R_G)$
$I_F = 400$ A, $V_{CE} = 600$ V

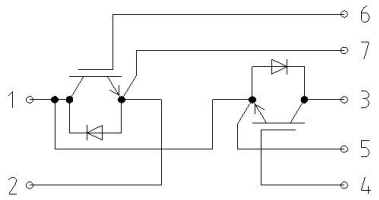


Wechselrichter transient thermal impedance Diode, Inverter
$Z_{thJC} = f(t)$



Outline:





Unmarked dimensional tolerance：±0.5mm

TECHSEM reserves the right to change specifications without notice.