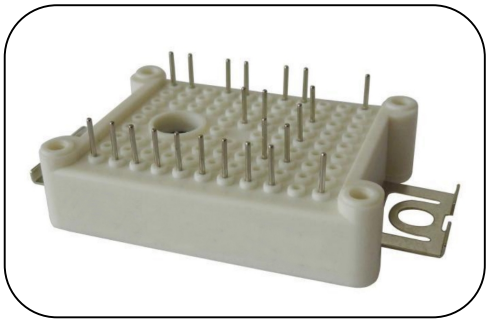


Features：

- **n** 10us short circuit capability
- **n** Low switching losses
- **n** VCE(sat) with Positive temperature coefficient
- **n** Fast & soft reverse recovery anti-parallel FWD

Typical Applications：

- **n** Inverter for motor drive(VFD)
- **n** AC and DC servo drive amplifier
- **n** Uninterruptible power supply

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	Continuous@ T_C=125°C			15	A
I_{CP}		T_P=1ms			23	A
P_C	Collector power dissipation	T_j=150°C ,1 device			130	W
T_j	Junction temperature	/			150	℃
T_{op}	Operating temperature	/	-40		150	℃
T_{stg}	Storage temperature	/	-40		150	℃
V_{iso}	Isolation between terminal and copper base	T_j=25°C , AC：1minute	2500			V
I_{CES}	Zero gate voltage collector current	T_j=25°C ,V_{CE}=1200V，V_{GE}=0V			0.1	mA
I_{GES}	Gate-Emitter leakage current	T_j=25°C ,V_{CE}=0V，V_{GE}=±20V	-0.4		0.4	μA
$V_{GE(th)}$	Gate-Emitter threshold voltage	T_j=25°C ,V_{CE}=20V，I_C=1.2mA	5.0	5.2	6.0	V
$V_{CE(sat)}$	Collector-Emitter saturation voltage	T_j=25°C ,V_{GE}=15V，I_C=15A		2.0	2.5	V
		T_j=125°C ,V_{GE}=15V，I_C=15A		2.15		V
		T_j=150°C ,V_{GE}=15V，I_C=15A		2.25		V
Q_g	Gate Charge	T_j=25°C ,V_{CE}=600V,Ic=15A,V_{GE}=15V		0.11		μC
R_{Gint}	Integrated gate resistor			3		Ω
C_{ies}	Input capacitance	T_j=25°C ,V_{CE}=25V，V_{GE}=0V，f=1MHz		1.4		nF
C_{res}	Reverse transfer capacitance			0.05		nF
$t_{(d)on}$	Turn-on time	T_j=150°C, V_{CC}=600V, I_C=15A, V_{GE}=±15V, R_g=30Ω（R_g=51Ω，T_j=125°C）, Inductive load		55		ns
t_r				65		ns
$t_{(d)off}$	Turn-off time			280		ns
t_f				215		ns
E_{on}	Turn-on energy loss per pulse	I_C=15 A, V_{CE}=600 V, L_S=50nH V_{GE}=±15 V, di/dt=550 A/μs (T_{vj}=150°C) R_{Gon}=39Ω		1.95		mJ
E_{off}	Turn-off energy loss per pulse			1.35		mJ
I_{SC}	SC data	V_{GE}≤15 V, V_{CC}=800V, V_{CEmax}=V_{CES}-L_{sCE}·di/dt, t_P≤10μs, T_{vj}=150°C		55		A
tsc	Short circuit withstand time	V_{CES}£600V,V_{GE}=±15V，R_g=30Ω		10		μs

V_F	Forward on voltage	T_j=25°C ,I_F=15A		2.1	2.3	V
		T_j=125°C ,I_F=15A		2.2		V
		T_j=150°C ,I_F=15A		2.2		V
I_{FRM}	Repetitive peak forward current			23		A
Q_r	Recovered charge	I_F=15 A, -diF/dt=550 A/μs (T_{vj}=150°C), V_R=600V, V_{GE}=-15V, T_j=150°C		2.40		μC
E_{rec}	Reverse recovery energy	I_F=15A, -diF/dt=550 A/μs (T_{vj}=150°C), V_R=600V, V_{GE}=-15V, T_j=150°C		0.80		mJ
t_{rr}	Reverse recovery time	T_j=25°C ,I_F=15A, di_F/dt=-1600A/μs，V_R=600V		150		ns
$R_{th(j-c)}$	Thermal resistance(per chip)	IGBT		0.8		℃/W
		FWD		2.5		℃/W
$R_{th(c-f)}$	Contact thermal resistance (per module)	With thermal compound		0.05		℃/W
R_{25}	Resistance	T_{vj}=25°C		5		kΩ
△R/R	Deviation of R100	T_C=100°C, R_{100}=493W	-5		5	%
P_{25}	Power dissipation	T_C=25°C			20.0	mW
$B_{25/50}$	B-value	$R_2=R_{25}$ exp [$B_{25/50}$(1/T_2-1/(298,15K))]		3375		K
$B_{25/80}$		$R_2=R_{25}$ exp [$B_{25/80}$(1/T_2-1/(298,15K))]		3411		K
$B_{25/100}$		$R_2=R_{25}$ exp [$B_{25/100}$(1/T_2-1/(298,15K))]		3433		K
Screw torque	Mounting force per clamp（M4）	/	1.5		2.5	N·m
W_t	Weight			24		g
Outline	258H5P					

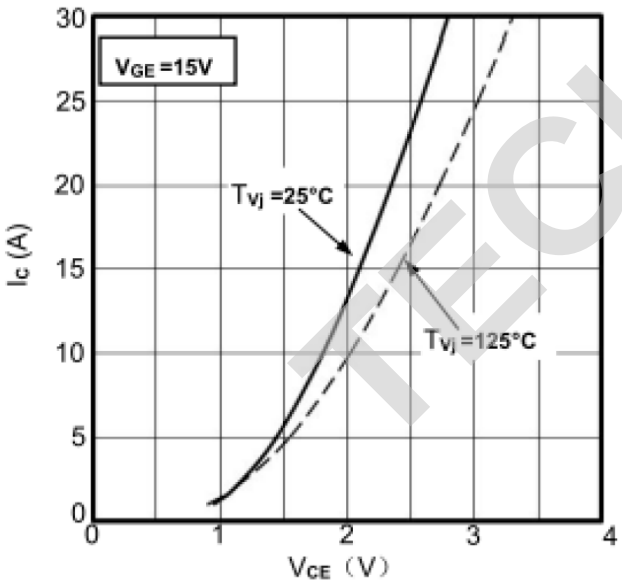


Figure1. Typical Output Characteristics

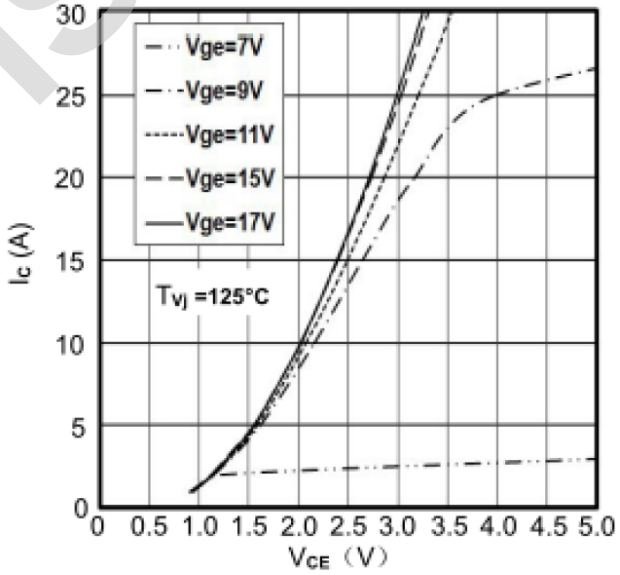


Figure2. Typical Output Characteristics

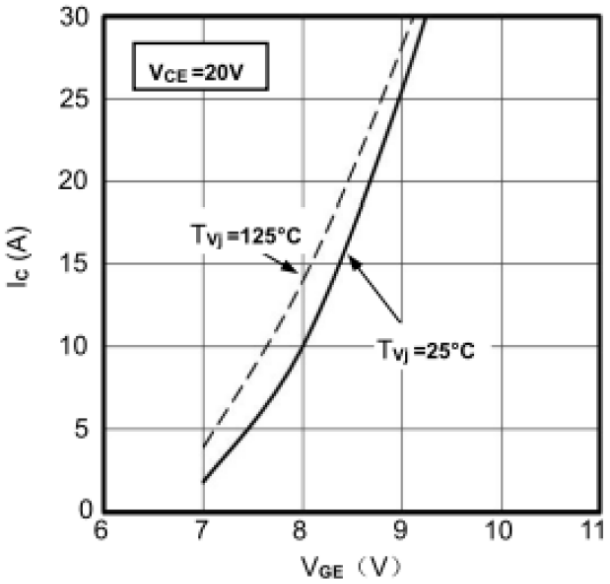


Figure3. Typical Transfer characteristics

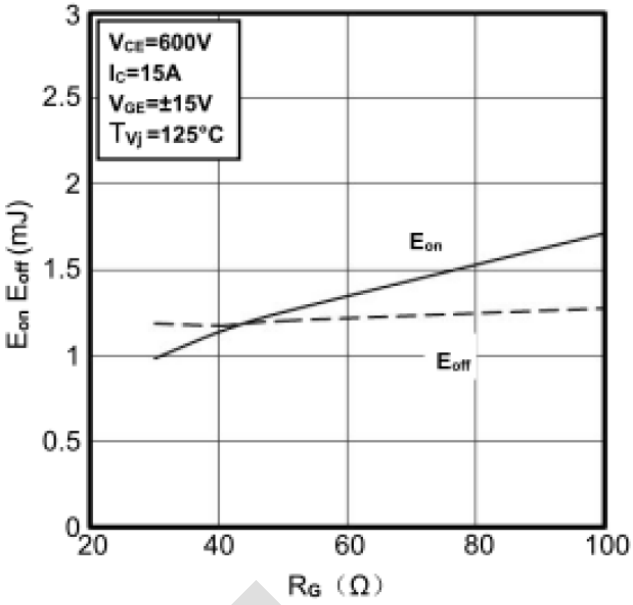


Figure4. Switching Energy vs. Gate Resistor

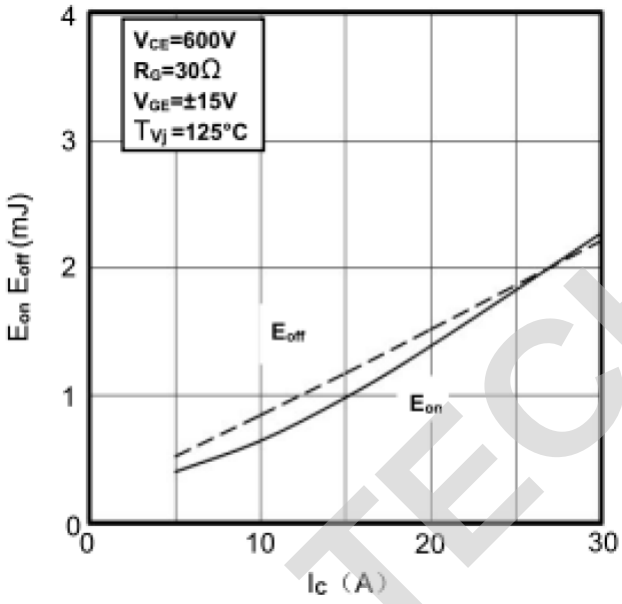


Figure5. Switching Energy vs. Collector Current

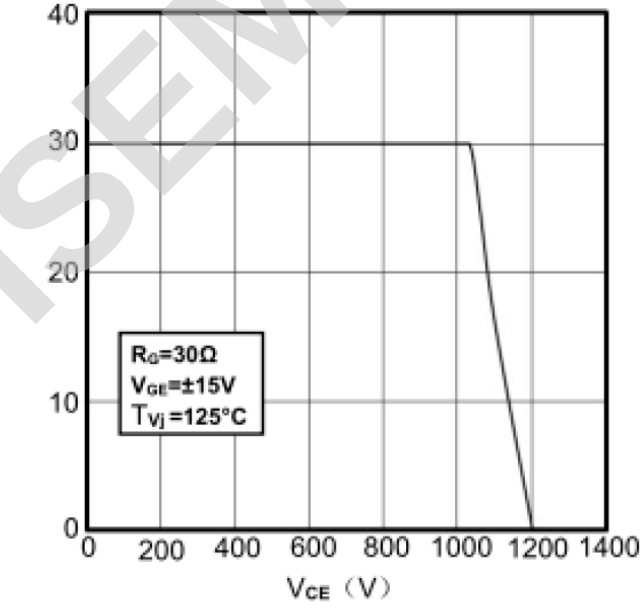


Figure6. Reverse Biased Safe Operating Area

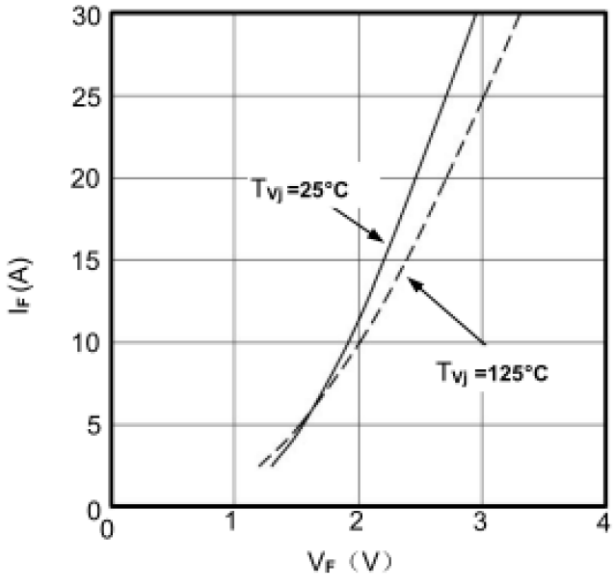


Figure7. Diode Forward Characteristics

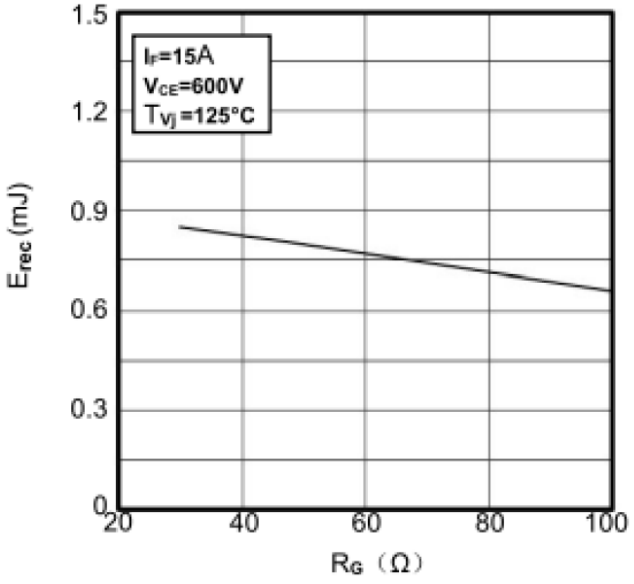


Figure8. Switching Energy vs. Gate Resistor

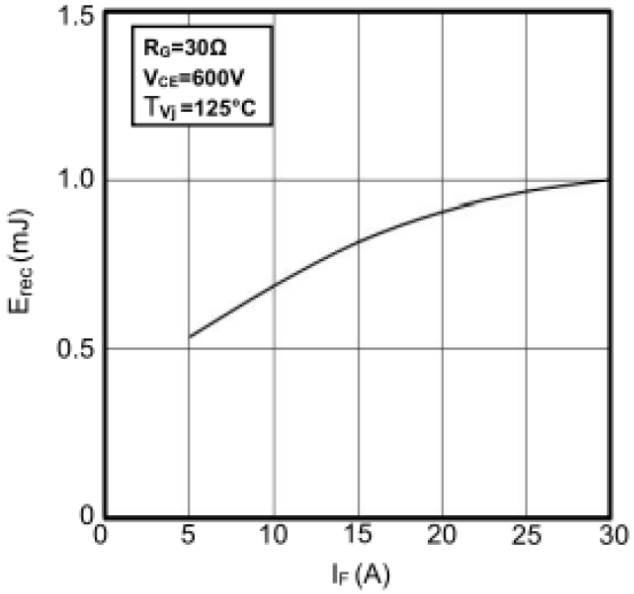


Figure9. Switching Energy vs. Forward Current

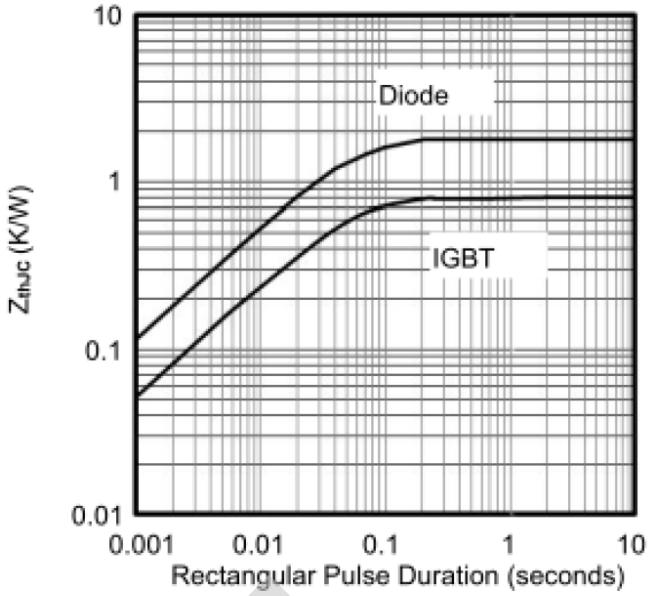


Figure10. Transient Thermal Impedance

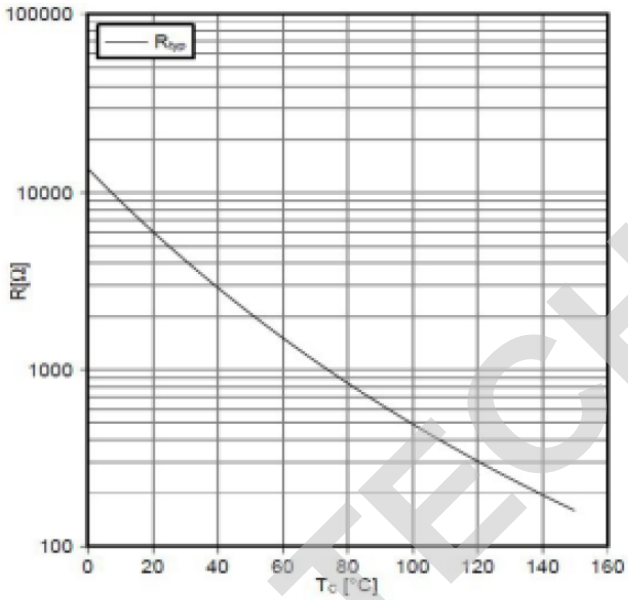
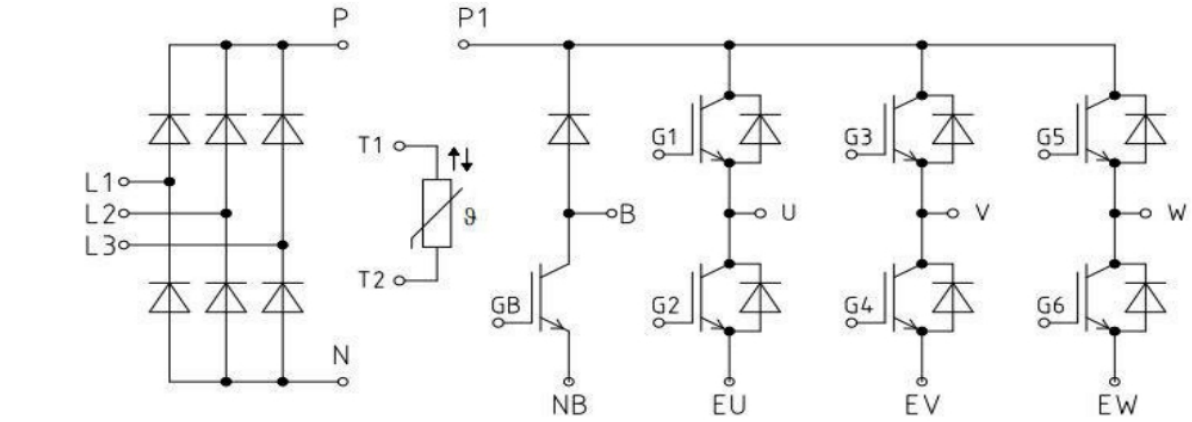
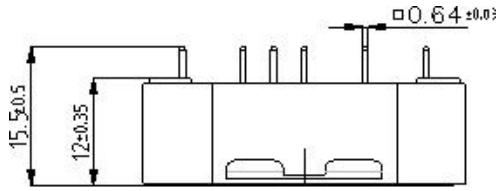
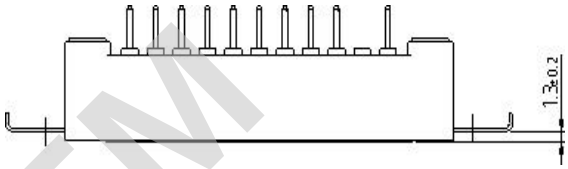


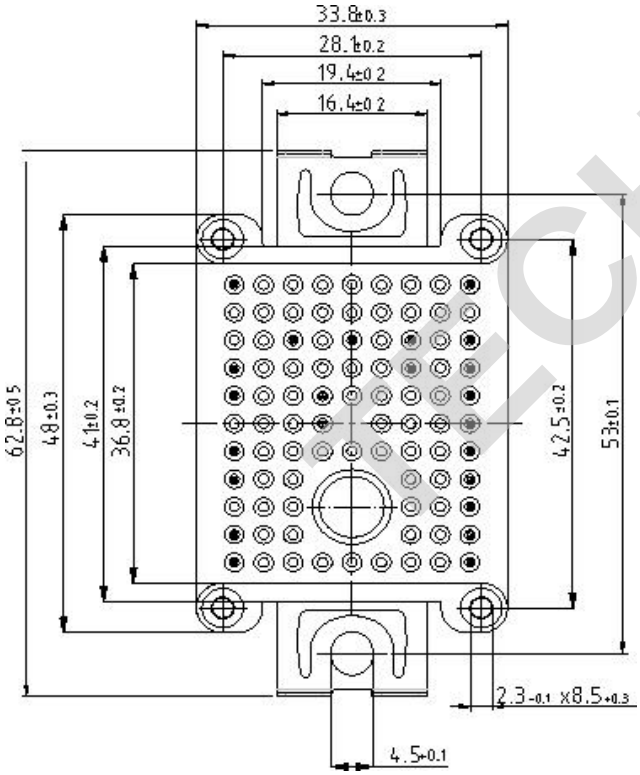
Figure11. NTC-Thermistor-temperature characteristic

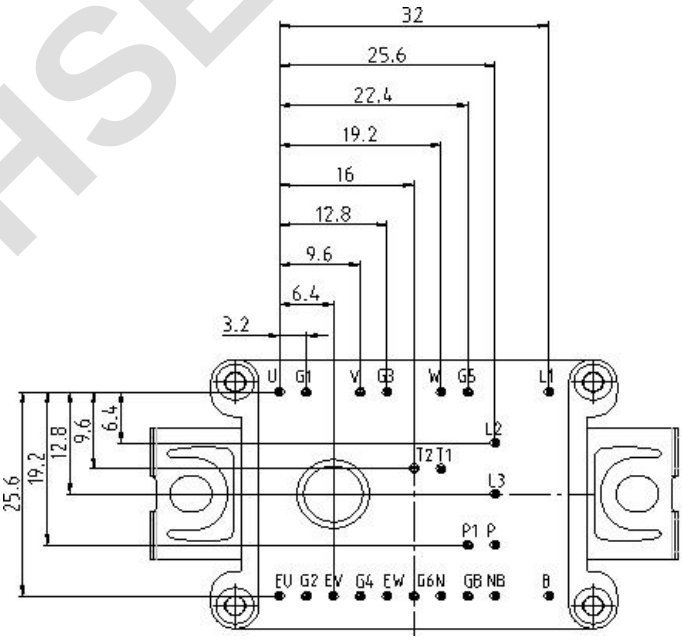
Outline & Circuit Diagram











Unmarked dimensional tolerance：±0.5mm

TECHSEM reserves the right to change specifications without notice.