**Features:**

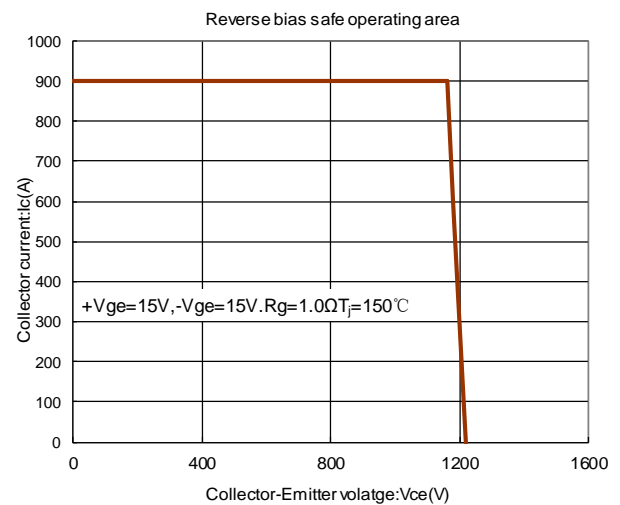
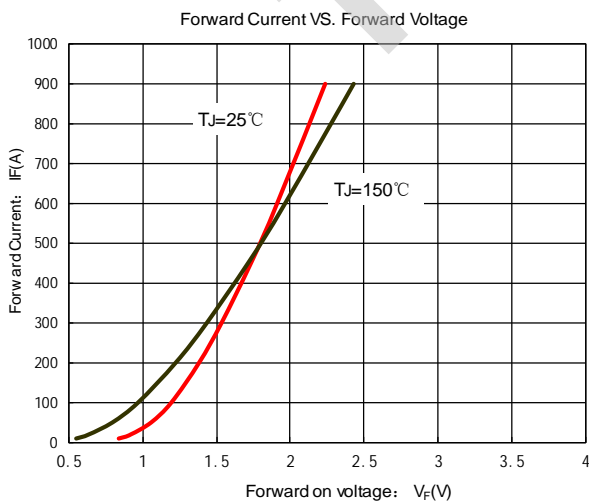
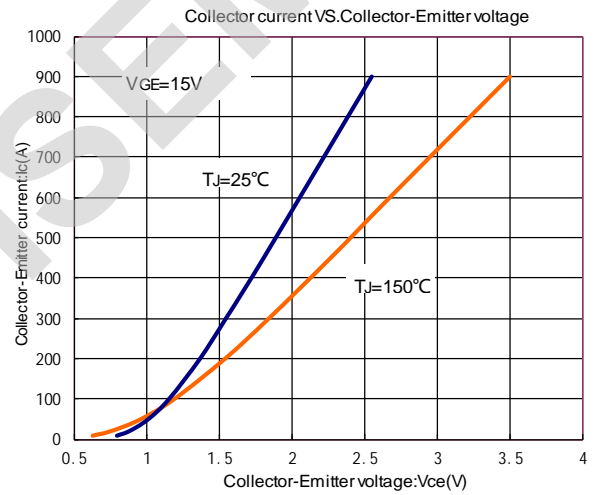
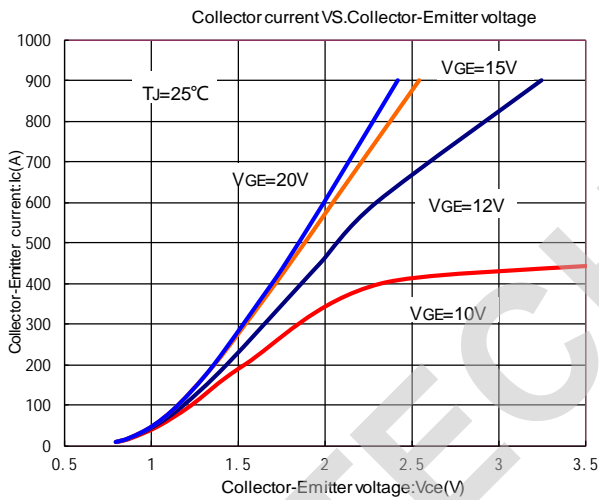
- n Low V_{CEsat}
- n Standard Housing

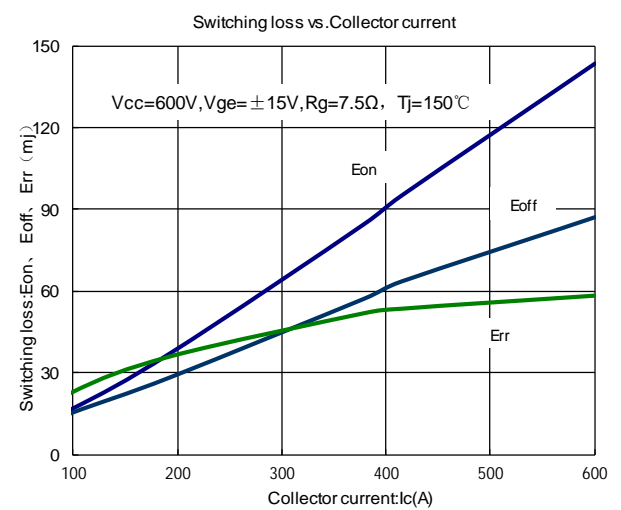
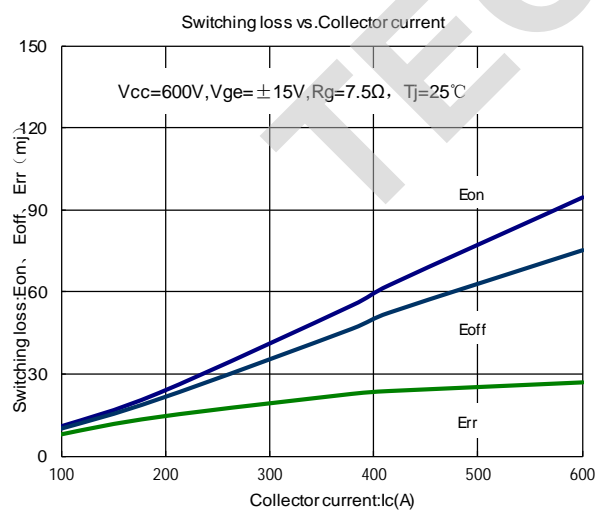
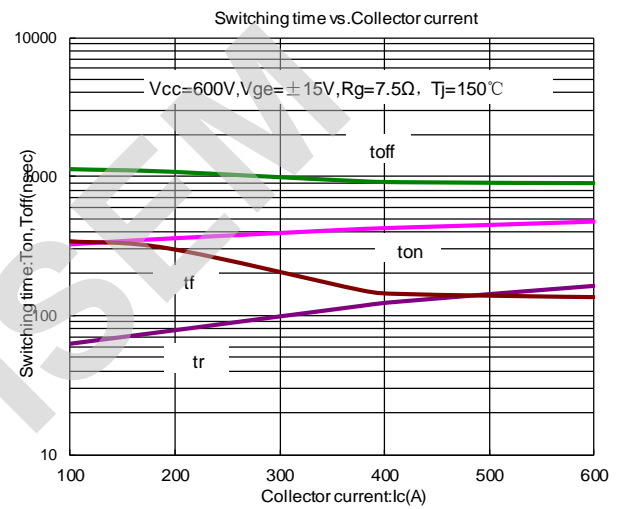
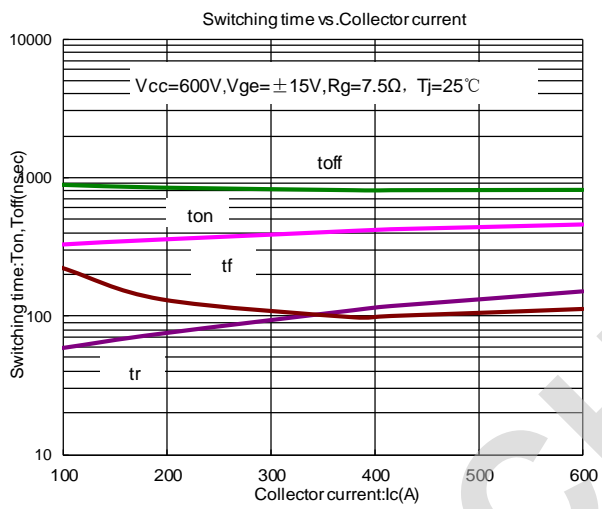
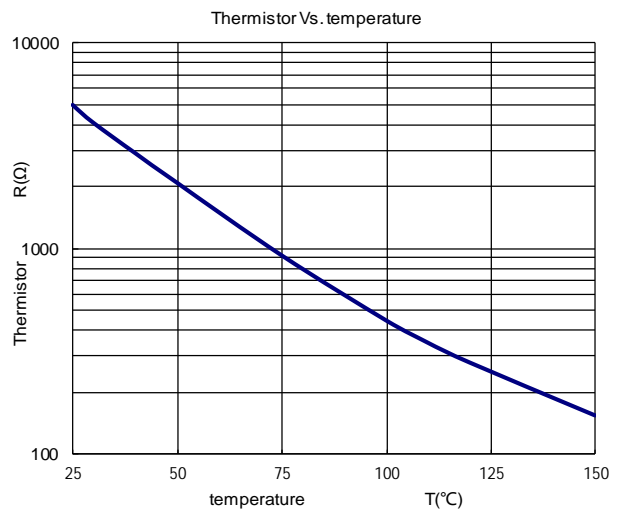
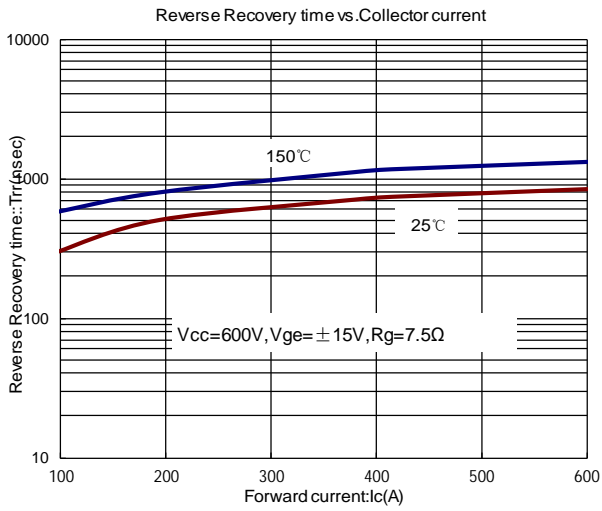
Typical Applications:

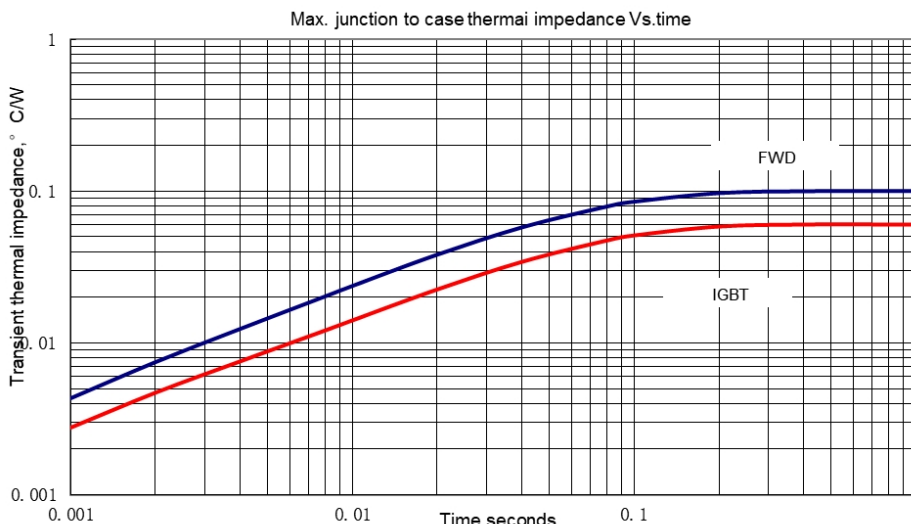
- n Motor Drive
- n Servo Drive
- n Uninterruptible Power Supply System
- n Wind Turbines
- n High Power Converters

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VALUE			UNIT
			Min	Type	Max	
V_{CES}	Collector-Emitter voltage	$T_j=25^\circ\text{C}$			1200	V
V_{GES}	Gate-Emitter voltage	$T_j=25^\circ\text{C}$			± 20	V
I_C	Collector current	Continuous @ $T_C=80^\circ\text{C}$			450	A
I_{CP}		$T_P=1\text{ms}$			900	A
P_C	Collector power dissipation	$T_j=25^\circ\text{C}$, 1 device			2100	W
T_{Vjop}	Junction temperature	/	-40		125	$^\circ\text{C}$
T_{stg}	Storage temperature	/	-40		125	$^\circ\text{C}$
V_{iso}	Isolation between terminal and copper base	$T_j=25^\circ\text{C}$, AC: 1minute	2500			V
I_{CES}	Zero gate voltage collector current	$T_j=25^\circ\text{C}$, $V_{CE}=1200\text{V}$, $V_{GE}=0\text{V}$			5.0	mA
I_{GES}	Gate-Emitter leakage current	$T_j=25^\circ\text{C}$, $V_{CE}=0\text{V}$, $V_{GE}=\pm 20\text{V}$			0.4	μA
$V_{GE(th)}$	Gate-Emitter threshold voltage	$T_j=25^\circ\text{C}$, $V_{CE}=20\text{V}$, $I_C=18\text{mA}$	5.0	5.8	6.5	V
$V_{CE(sat)}$	Collector-Emitter saturation voltage	$T_j=25^\circ\text{C}$, $V_{GE}=15\text{V}$, $I_C=450\text{A}$		1.70	2.15	V
		$T_j=125^\circ\text{C}$, $V_{GE}=15\text{V}$, $I_C=450\text{A}$		2.00		V
		$T_j=150^\circ\text{C}$, $V_{GE}=15\text{V}$, $I_C=450\text{A}$		2.05		V
Q_G	Gate charge	$V_{GE}=\pm 15\text{V}$		4.30		μC
R_{Gint}	Internal gate resistor	$T_j=25^\circ\text{C}$		1.7		Ω
C_{ies}	Input capacitance	$T_j=25^\circ\text{C}$, $V_{CE}=25\text{V}$, $V_{GE}=0\text{V}$, $f=1\text{MHz}$		32.0		nF
C_{res}	Reverse transfer capacitance			1.5		nF
t_{on}	Turn-on time		$V_{CC}=600\text{V}$, $I_C=450\text{A}$, $V_{GE}=\pm 15\text{V}$, $R_g=7.5\Omega$, Inductive load, $T_j=150^\circ\text{C}$		430	
t_r	Rise time			120		ns
t_{off}	Turn-off time			900		ns
t_f	Fall time			150		ns
E_{on}	Turn-on energy loss per pulse			95		mJ
E_{off}	Turn-off energy loss per pulse		65		mJ	
I_{sc}	Short circuit	$T_j=125^\circ\text{C}$, $V_{CC}=900\text{V}$, $V_{GE}\leq 15\text{V}$		1800		A
t_{sc}	Short circuit withstand time	$T_j=150^\circ\text{C}$, $V_{CC}=720\text{V}$, $V_{GE}=\pm 15\text{V}$, $R_g=7.5\Omega$	10			μs
V_F	Forward on voltage	$I_F=450\text{A}$, $T_j=25^\circ\text{C}$		1.65	2.15	V
		$I_F=450\text{A}$, $T_j=125^\circ\text{C}$		1.65		V
		$I_F=450\text{A}$, $T_j=150^\circ\text{C}$		1.62		V
I_{RM}	Peak reverse recovery current	$I_F=450\text{A}$, $-diF/dt=7800\text{A}/\mu\text{s}$ ($T_{vj}=125^\circ\text{C}$), $V_R=600\text{V}$, $V_{GE}=-15\text{V}$, $T_j=125^\circ\text{C}$		405		A
Q_r	Recovered charge			85.0		μC
E_{rec}	Reverse recovery energy	$V_{CC}=600\text{V}$, $I_C=450\text{A}$, Inductive load, $T_j=150^\circ\text{C}$		55		mJ
t_{rr}	Reverse recovery time	$I_F=450\text{A}$	$T_j=25^\circ\text{C}$		750	ns
			$T_j=125^\circ\text{C}$		1100	ns

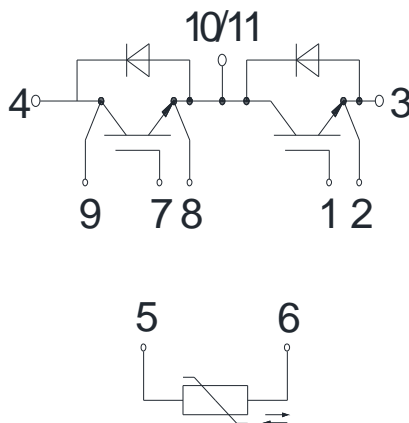
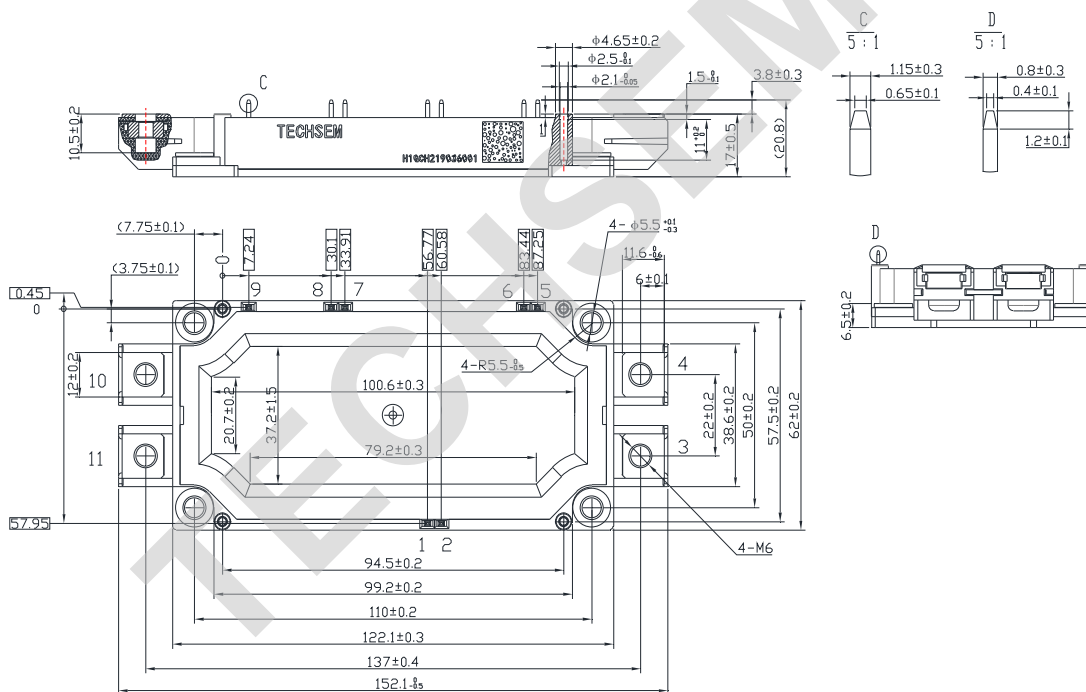
$R_{th(j-c)}$	Thermal resistance(1 device)	IGBT			0.06	°C /W
		FWD			0.10	°C /W
$R_{th(c-H)}$	Thermal resistance, case to heatsink	per module			0.009	°C /W
R_{25}	Rated resistance	$T_C=25^{\circ}C$			5.0	kΩ
$\Delta R/R$	Deviation of R100	$T_C=100^{\circ}C, R_{100}=493 W$		-5	5	%
P_{25}	Power dissipation	$T_C=25^{\circ}C$			20	mW
$B_{25/50}$	B-value	$R_2=R_{25}\exp [B_{25/50}(1/T_2-1/(298,15 K))]$			3375	K
$B_{25/80}$	B-value	$R_2=R_{25}\exp [B_{25/80}(1/T_2-1/(298,15 K))]$			3411	K
$B_{25/100}$	B-value	$R_2=R_{25}\exp [B_{25/100}(1/T_2-1/(298,15 K))]$			3433	K
Screw torque	Mounting(M5)	/	3.0		6.0	N·m
	Terminals(M6)	/	3.0		6.0	N·m
W_t	Weight				345	g
Outline	465H3					







Outline & Circuit Diagram



Unmarked dimensional tolerance: $\pm 0.5\text{mm}$

TECHSEM reserves the right to change specifications without notice.