**Features:**

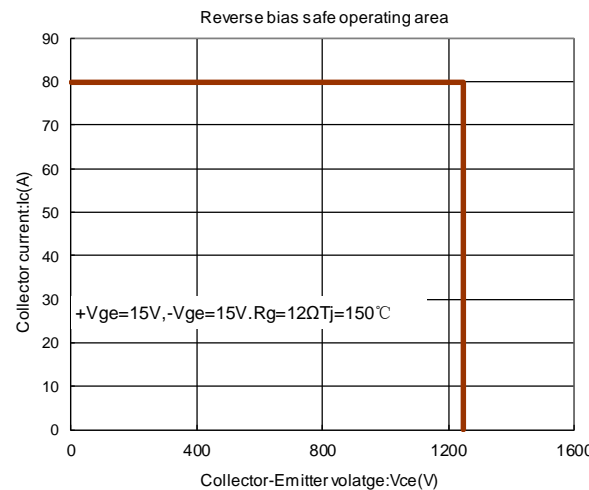
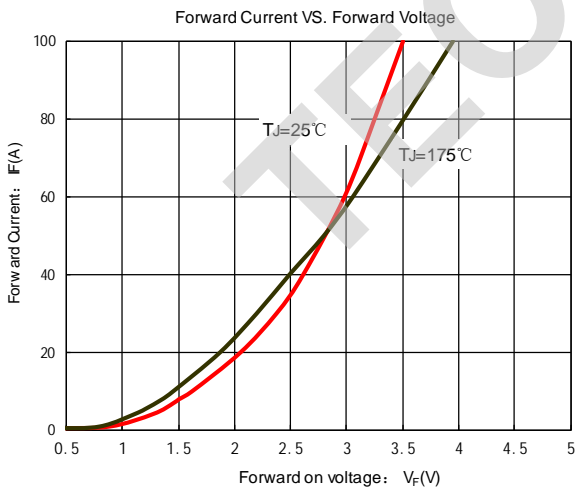
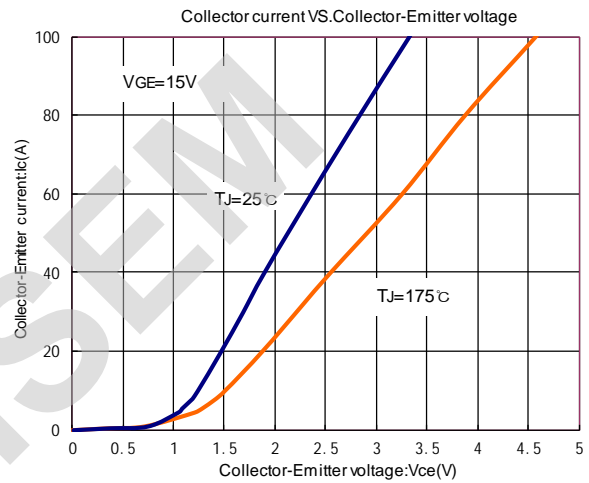
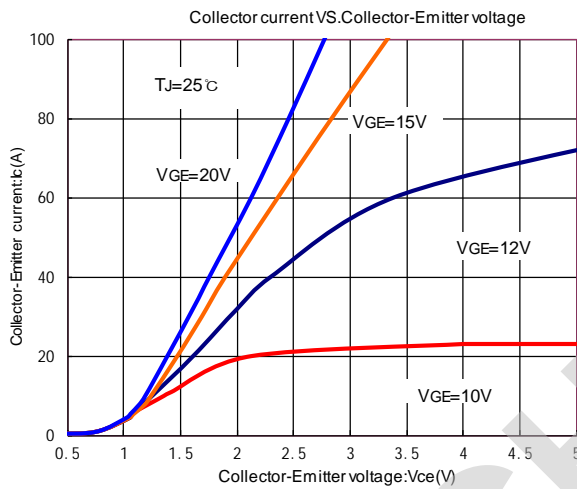
- n  $V_{CE(sat)(typ.)}=2.0V @ V_{GE}=15V, I_C=40A$
- n High speed switching
- n Higher system efficiency
- n Soft current turn-off waveforms
- n Square RBSOA using Trench-Fs technology
- n RoHS compliant

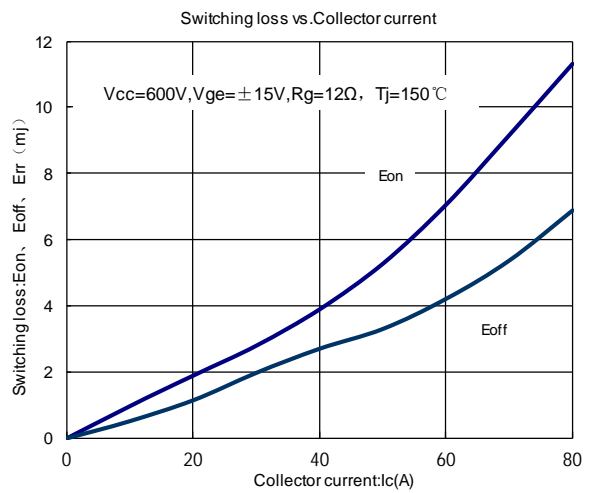
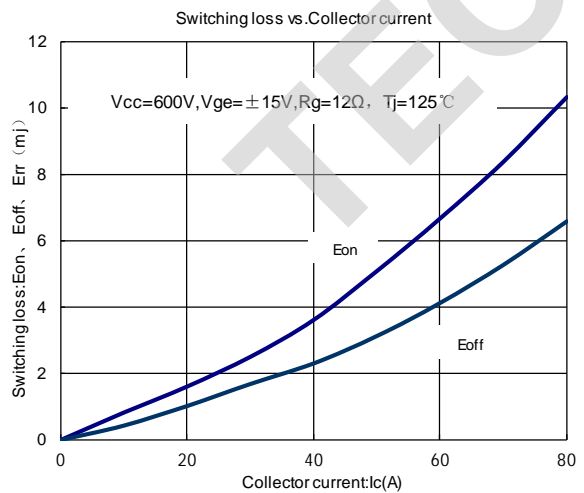
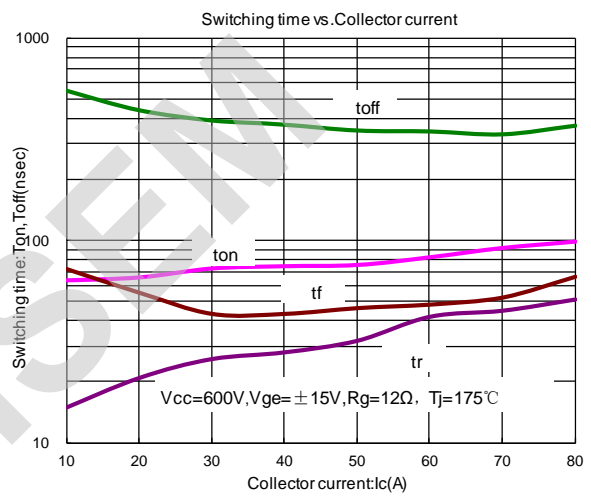
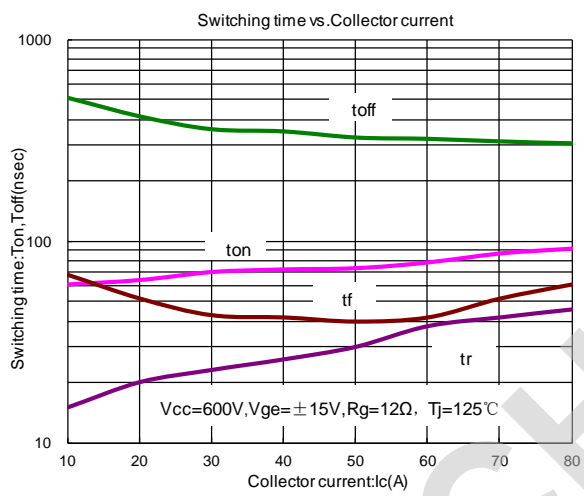
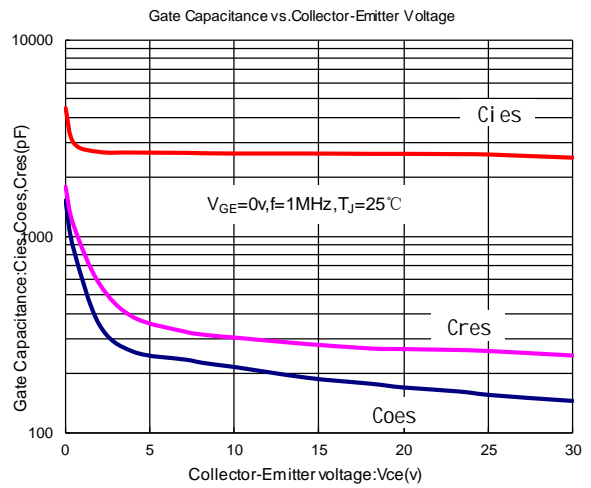
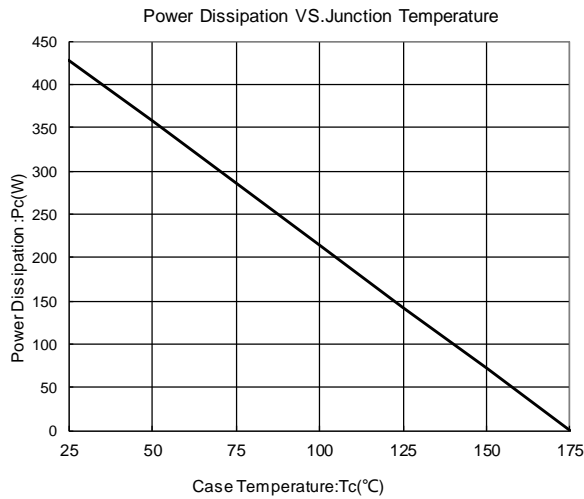
**Typical Applications:**

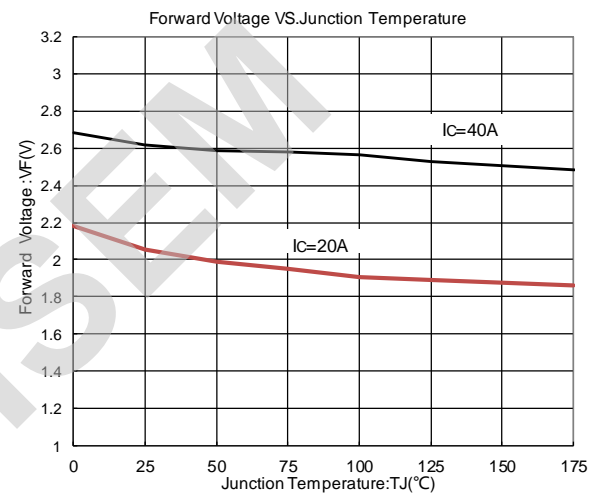
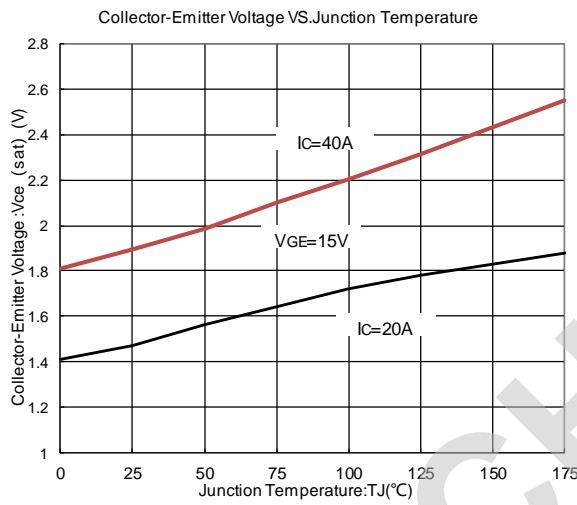
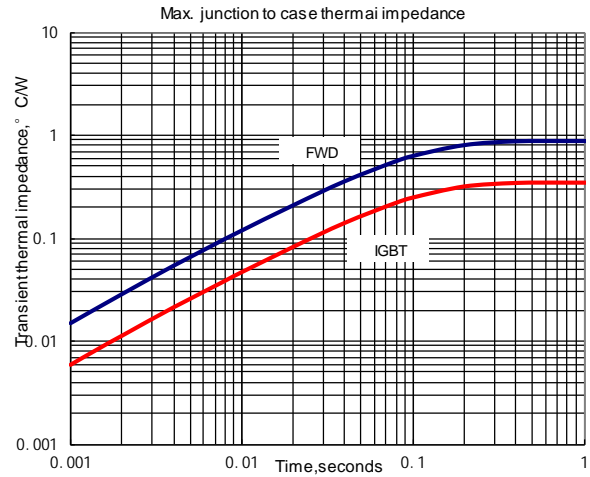
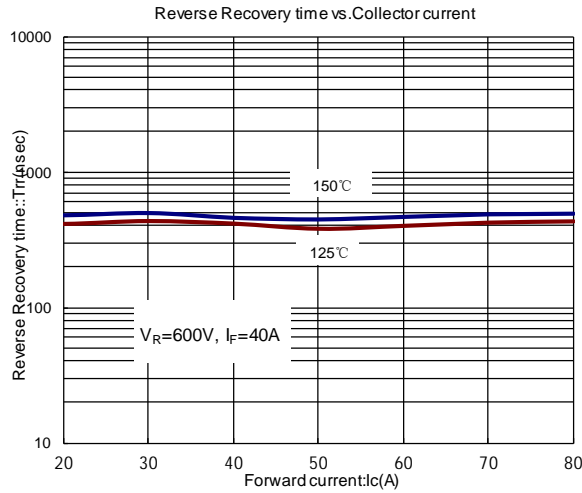
- n Inverter for motor drive(VFD)
- n AC and DC servo drive amplifier
- n UPS

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VALUE			UNIT
			Min	Type	Max	
$V_{CES}$	Collector-Emitter voltage	$T_j=25^\circ C$			1200	V
$V_{GES}$	Gate-Emitter voltage	$T_j=25^\circ C$			$\pm 30$	V
$I_C$	Continuous Collector current	$T_C=25^\circ C$			80	A
		$T_C=100^\circ C$			40	A
$I_{CP}$	DC collector current, limited by $T_{vjmax}$	$T_P=1ms$			160	A
$P_C$	Power dissipation	$T_C=100^\circ C$			214	W
$T_j$	Junction temperature	/			175	$^\circ C$
$T_{stg}$	Storage temperature	/	-55		150	$^\circ C$
$T_L$	Lead Temperature (Soldering, 10 sec)				260	$^\circ C$
$I_{CES}$	Zero gate voltage collector current	$T_j=25^\circ C, V_{CE}=1200V, V_{GE}=0V$			250	$\mu A$
$I_{GES}$	Gate-Emitter leakage current	$T_j=25^\circ C, V_{CE}=0V, V_{GE}=\pm 30V$			$\pm 600$	nA
$V_{GE(th)}$	Gate-Emitter threshold voltage	$T_j=25^\circ C, V_{CE}=V_{GE}, I_C=2.0mA$	5.0	5.8	6.5	V
$V_{CE(sat)}$	Collector-Emitter saturation voltage	$T_j=25^\circ C, V_{GE}=15V, I_C=40A$		1.8	2.4	V
		$T_j=125^\circ C, V_{GE}=15V, I_C=40A$		2.4		V
		$T_j=175^\circ C, V_{GE}=15V, I_C=40A$		2.6		V
$Q_G$	Gate charge	$V_{GE}=\pm 15V$		0.28		$\mu C$
$R_{Gint}$	Internal gate resistor	$T_j=25^\circ C$		1.5		$\Omega$
$C_{ies}$	Input capacitance	$T_j=25^\circ C, V_{CE}=25V, V_{GE}=0V, f=1MHz$		2580		pF
$C_{res}$	Reverse Transfer Capacitance			259		pF
$t_{on}$	Turn-on time	$T_j=175^\circ C, V_{CC}=600V, I_C=40A, V_{GE}=\pm 15V, R_G=12\Omega$		74		ns
$t_r$	Rise Time			46		ns
$t_{off}$	Turn-off time			360		ns
$t_f$	Fall Time			43		ns
$E_{on}$	Turn-on energy			3.9		mJ
$E_{off}$	Turn-off energy			2.7		mJ
$I_{sc}$	SC data		$V_{GE} \leq 15V, V_{CC}=600V, t_P \leq 10\mu s, T_{vj}=175^\circ C$		139	
$t_{sc}$	Short circuit withstand time	$V_{CES} \leq 600V, V_{GE} = \pm 15V$			10	$\mu s$
$V_F$	Forward on voltage	$T_j=25^\circ C, I_F=40A, V_{GE}=0V$		2.60	3.05	V
		$T_j=125^\circ C, I_F=40A, V_{GE}=0V$		2.65		V
		$T_j=150^\circ C, I_F=40A, V_{GE}=0V$		2.70		V
$I_{RM}$	Peak reverse recovery current	$I_F=40A, -diF/dt=500A/\mu s, V_R=600V,$		16		A

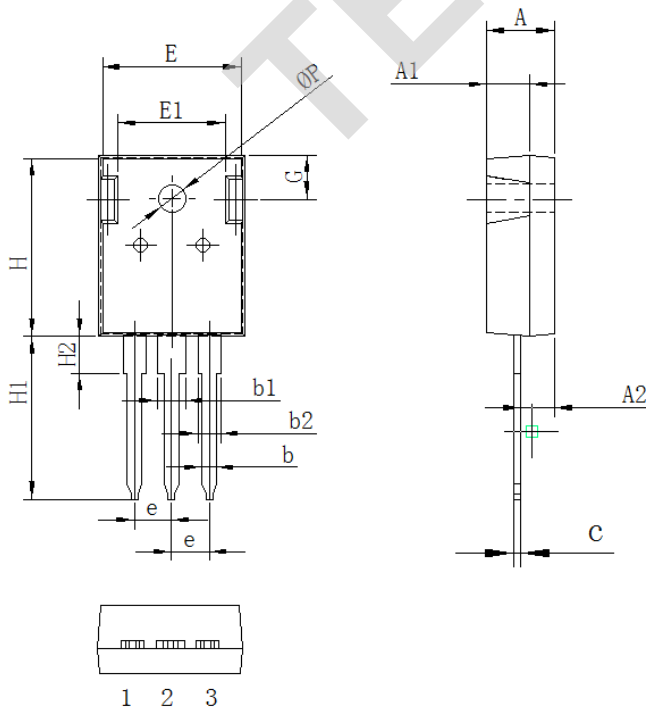
$Q_r$	Recovered charge	$T_j=175^\circ\text{C}$	4.30	$\mu\text{C}$
$E_{rec}$	Reverse recovery energy		2.52	mJ
$t_{rr}$	Reverse recovery time	$V_R=600\text{V}, I_F=40\text{A}, di_F/dt=500\text{A/us}$	450	ns
$R_{th(j-c)}$	Thermal resistance(Junction-to-Case)	IGBT	0.35	$^\circ\text{C/W}$
		Diode	0.88	$^\circ\text{C/W}$
$R_{th(j-A)}$	Thermal resistance(Junction-to-Ambien)		42	$^\circ\text{C/W}$
Outline	TO-247			







Outline: TO-247



Symbol	单位 mm		
	Min	Nom	Max
A	4.8	5.00	5.20
A1	3.3	3.5	3.7
A2	2.20	2.40	2.60
b	1.00	1.2	1.40
b1	2.90	3.10	3.30
b2	1.90	2.10	2.30
c	0.50	0.60	0.70
e	5.25	5.45	5.65
E	15.2	15.7	16.2
E1	10.2	10.7	11.2
H	20.8	21	21.2
H1	19.5	20.0	20.5
H2	4.00	4.20	4.40
G	5.60	5.80	600
$\Phi P$	3.30	3.50	3.70