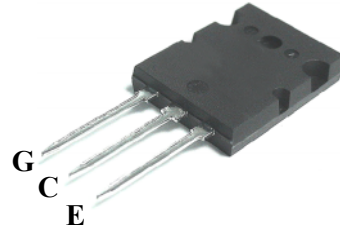
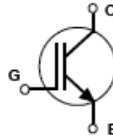


**PRELIMINARY DATASHEET**
**1200V 75A IGBT in Ext TO264 Package**

- Ultra low loss IGBT
- Highly rugged SPT design
- Designed for
  - Motor controls
  - General inverters
  - Uninterrupted power supplies (UPS)
- Pb-free lead finish; RoHS compliant


**MAXIMUM RATINGS**

Parameter	Symbol	Value	Units
Collector-emitter voltage	$V_{CE}$	1200	V
DC collector current	$I_C$	75	A
Pulsed collector current	$I_{CM}$	150	
Gate-emitter voltage	$V_{GE}$	$\pm 20$	V
IGBT short circuit SOA $V_{CC} = 900V, V_{GE} = 15V, V_{CEM} \leq 1200V, T_{VJ} = 125^\circ C$	$t_{SC}$	10	$\mu s$
Soldering temperature Wave soldering, 1.6 mm (0.063 in.) from case for 10s	$T_S$	300	$^\circ C$
Operating junction and storage temperature	$T_{VJ}$	-40... +150	$^\circ C$

**ELECTRICAL CHARACTERISTICS, at  $T_j = 25^\circ C$ , unless otherwise specified**

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
<b>Static Characteristics</b>						
Collector-emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE} = 0V, I_C = 1mA$	1200	-	-	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$V_{GE} = 15V, I_C = 75A$ $T = 25^\circ C$ $T = 125^\circ C$	-	1.8 2.0	-	
Gate-emitter threshold voltage	$V_{GE(th)}$	$I_C = 3mA, V_{CE} = V_{GE}$	5	6.2	7	
Zero gate voltage collector current	$I_{CES}$	$V_{CE} = 1200V, V_{GE} = 0$ $T = 25^\circ C$ $T = 125^\circ C$	-	-	100 -	mA
Gate-emitter leakage current	$I_{GES}$	$V_{CE} = 0V, V_{GE} = 20V,$ $T = 125^\circ C$	-200	-	200	nA
Transconductance	$R_{Gint}$		-	3	-	$\Omega$
<b>Dynamic Characteristics</b>						
Input capacitance	$C_{iss}$	$V_{CE} = 25V,$ $V_{GE} = 0V,$ $f = 1MHz$	-	5.52	-	nF
Output capacitance	$C_{oss}$		-	0.40	-	
Reverse transfer capacitance	$C_{rss}$		-	0.26	-	

CAUTION: These devices are ESD sensitive. Use proper handling procedure.

**SWITCHING CHARACTERISTICS, Inductive Load** at  $T_j = 25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
<b>IGBT Characteristics</b>						
Turn-on delay time $T = 25^\circ\text{C}$ $T = 125^\circ\text{C}$	$t_{d(on)}$	$V_{CC}=600\text{V}$ , $I_C=75\text{A}$ , $V_{GE}=\pm 15\text{V}$ , $R_G=15\Omega$ , $L_\sigma = 60\text{nH}$ , Inductive load.	-	165	-	Ns
Rise time $T = 25^\circ\text{C}$ $T = 125^\circ\text{C}$	$t_r$		-	75	-	
Turn-off delay time $T = 25^\circ\text{C}$ $T = 125^\circ\text{C}$	$t_{d(off)}$		-	435	-	
Fall time $T = 25^\circ\text{C}$ $T = 125^\circ\text{C}$	$t_f$		-	50	-	
Turn-on energy $T = 25^\circ\text{C}$ $T = 125^\circ\text{C}$	$E_{on}$		-	9.3	-	mJ
Turn-off energy $T = 25^\circ\text{C}$ $T = 125^\circ\text{C}$	$E_{off}$		-	4.5	-	
Short circuit current	$I_{sc}$		$T_C=125^\circ\text{C}$ , $V_{CC}=900\text{V}$ , $V_{GE}=15\text{V}$ , $t_{psc}\leq 10\mu\text{s}$ , $V_{CEM}\leq 1200\text{V}$	-	350	-
Gate charge	$Q_g$	$V_{CE}=600\text{V}$ , $I_C=75\text{A}$ , $V_{GE}=-15\text{V}, 15\text{V}$	-	780	-	nC

**Package Outline Drawing**
