

**Fuji Discrete Package IGBT**

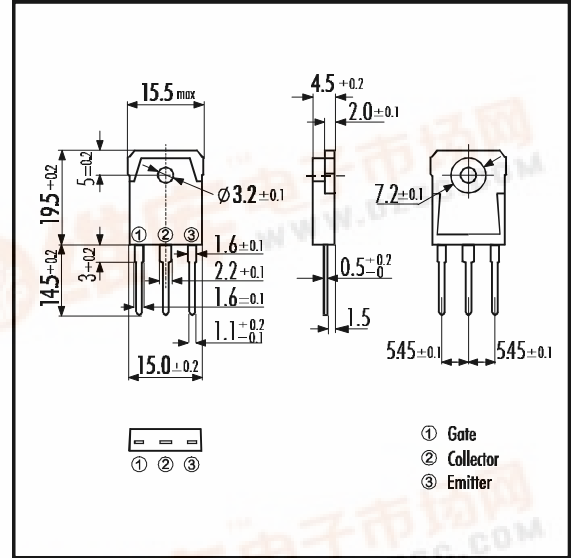
**Outline Drawing**

**Features**

- Square RBSOA
- Low Saturation Voltage
- Less Total Power Dissipation
- Minimized Internal Stray Inductance

**Applications**

- High Power Switching
- A.C. Motor Controls
- D.C. Motor Controls
- Uninterruptible Power Supply

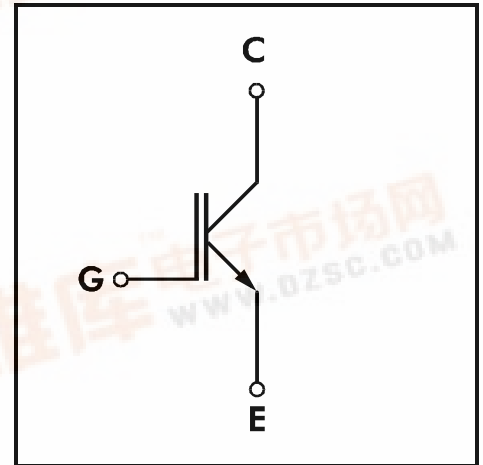


**Maximum Ratings and Characteristics**

**Equivalent Circuit**

**Absolute Maximum Ratings (T<sub>c</sub>=25°C)**

Items	Symbols	Ratings	Units
Collector-Emitter Voltage	V <sub>CEs</sub>	600	V
Gate -Emitter Voltage	V <sub>GES</sub>	± 20	V
Collector Current	DC T <sub>c</sub> = 25°C	I <sub>C 25</sub>	38
	DC T <sub>c</sub> =100°C	I <sub>C 100</sub>	20
	1ms T <sub>c</sub> = 25°C	I <sub>C PULSE</sub>	152
IGBT Max. Power Dissipation	P <sub>C</sub>	145	W
Operating Temperature	T <sub>j</sub>	+150	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +150	°C
Mounting Screw Torque		50	Nm



**Electrical Characteristics (at T<sub>j</sub>=25°C)**

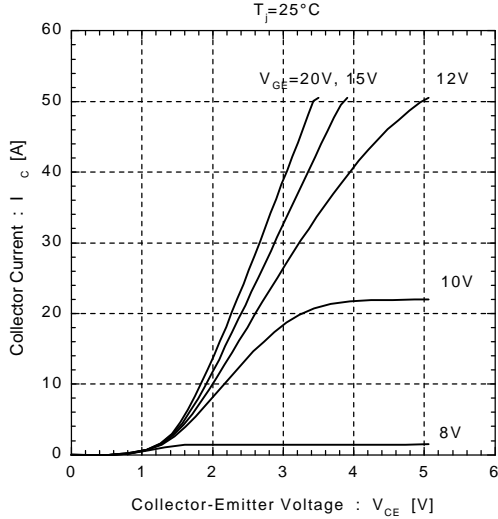
Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units		
Zero Gate Voltage Collector Current	I <sub>CEs</sub>	V <sub>GE</sub> =0V V <sub>CE</sub> =600V			1.0	mA		
Gate-Emitter Leakage Current	I <sub>GES</sub>	V <sub>CE</sub> =0V V <sub>GE</sub> =± 20V			20	µA		
Gate-Emitter Threshold Voltage	V <sub>GE(th)</sub>	V <sub>GE</sub> =20V I <sub>C</sub> =20mA	5.5		8.5	V		
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	V <sub>GE</sub> =15V I <sub>C</sub> =20A			3.0	V		
Input capacitance	C <sub>ies</sub>	V <sub>GE</sub> =0V		1300		pF		
Output capacitance	C <sub>oes</sub>	V <sub>CE</sub> =10V		300				
Reverse Transfer capacitance	C <sub>res</sub>	f=1MHz		70				
Switching Time	Turn-on Time	t <sub>ON</sub>	V <sub>CC</sub> =300V			1.2	µs	
		t <sub>r</sub>	I <sub>C</sub> =20A			0.6		
	Turn-off Time	t <sub>OFF</sub>	V <sub>GE</sub> =±15V			1.0		
		t <sub>f</sub>	R <sub>G</sub> =120Ω			0.35		
	Turn-on Time	t <sub>ON</sub>	V <sub>CC</sub> =300V		0.16			µs
		t <sub>r</sub>	I <sub>C</sub> =20A		0.11			
Turn-off Time	t <sub>OFF</sub>	V <sub>GE</sub> =+15V		0.30				
	t <sub>f</sub>	R <sub>G</sub> =12Ω			0.35			

**Thermal Characteristics**

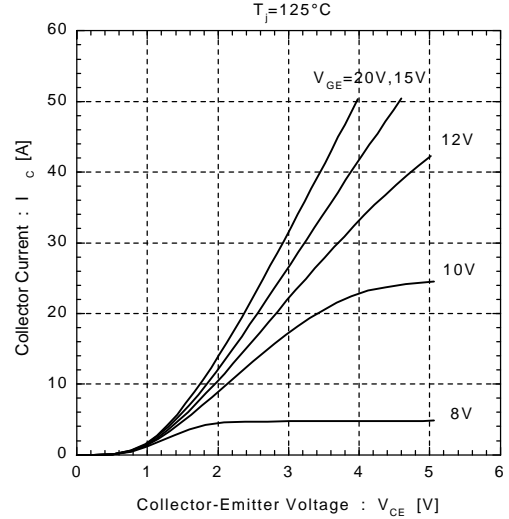
Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance	R <sub>th(j-c)</sub>				0.86	



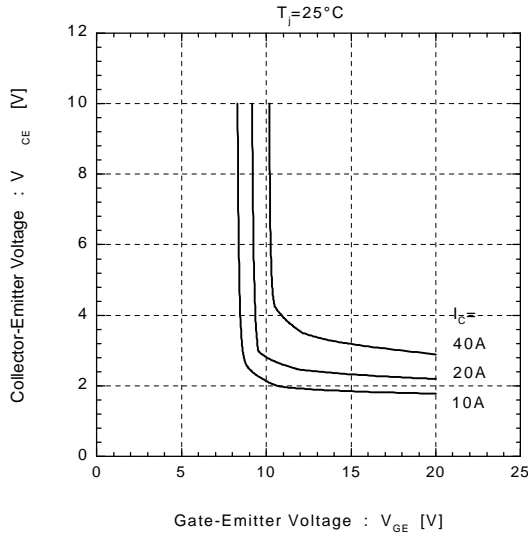
Collector Current vs. Collector-Emmitter Voltage



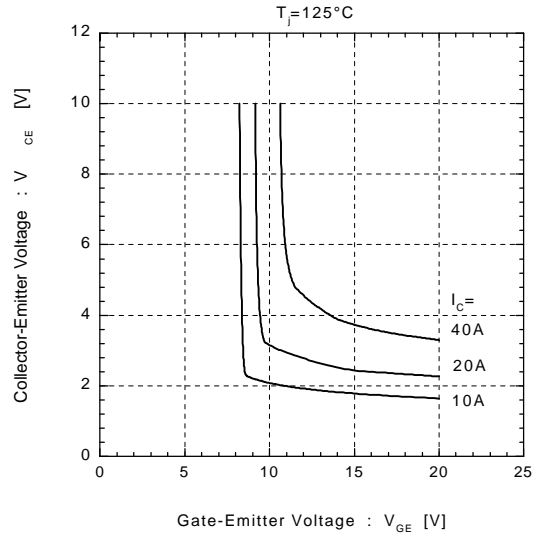
Collector Current vs. Collector-Emmitter Voltage



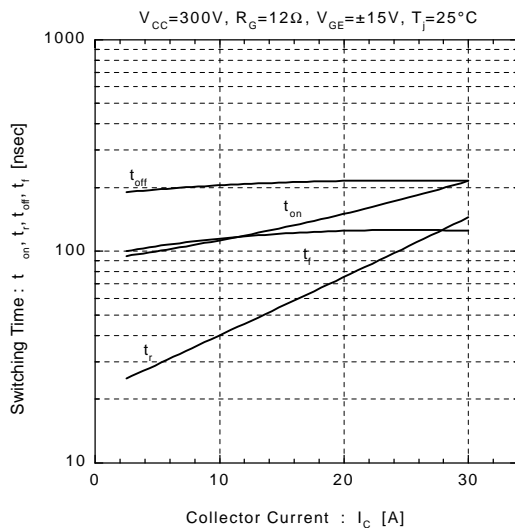
Collector-Emmitter Voltage vs. Gate-Emmitter Voltage



Collector-Emmitter Voltage vs. Gate-Emmitter Voltage



Switching Time vs. Collector Current



Switching Time vs. Collector Current

