

## Fuji Discrete Package IGBT

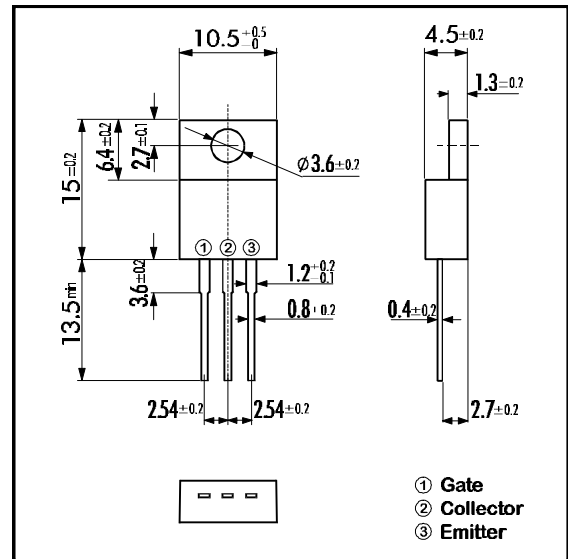
### ■ Features

- 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

## ■ Outline Drawing

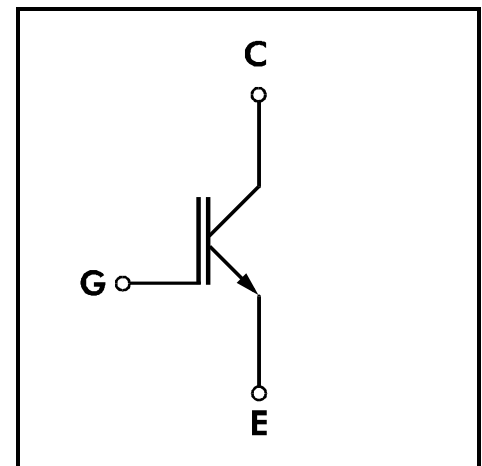


## ■ Maximum Ratings and Characteristics

### • 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>	20
	DC T <sub>c</sub> =100°C	I <sub>C 100</sub>	10
	1ms T <sub>c</sub> = 25°C	I <sub>C PULSE</sub>	80
IGBT Max. Power Dissipation	P <sub>C</sub>	75	W
Operating Temperature	T <sub>j</sub>	+150	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +125	°C
Mounting Screw Torque		40	Nm

## ■ Equivalent Circuit



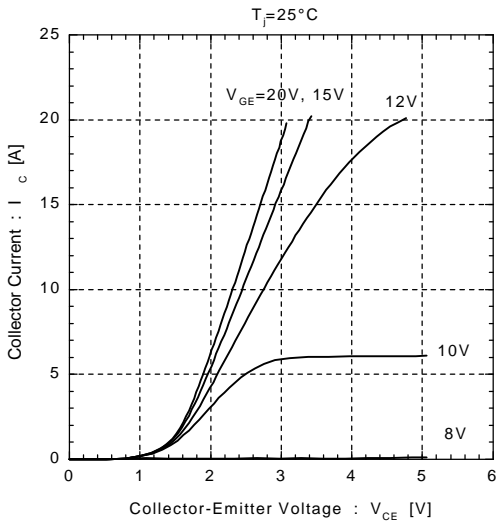
### • Electrical Characteristics (at T<sub>j</sub>=25°C)

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> =10mA	5.5		8.5	V	
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	V <sub>GE</sub> =15V I <sub>C</sub> =10A			3.0	V	
Input capacitance	C <sub>ies</sub>	V <sub>GE</sub> =0V		700		pF	
Output capacitance	C <sub>oes</sub>	V <sub>CE</sub> =10V		150			
Reverse Transfer capacitance	C <sub>res</sub>	f=1MHz		20			
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> =10A			0.6	
	Turn-off Time	t <sub>OFF</sub>	V <sub>GE</sub> =±15V			1.0	
		t <sub>f</sub>	R <sub>G</sub> =220Ω			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> =10A		0.11		
t <sub>OFF</sub>		V <sub>GE</sub> =+15V		0.30			
t <sub>f</sub>		R <sub>G</sub> =22Ω			0.35		

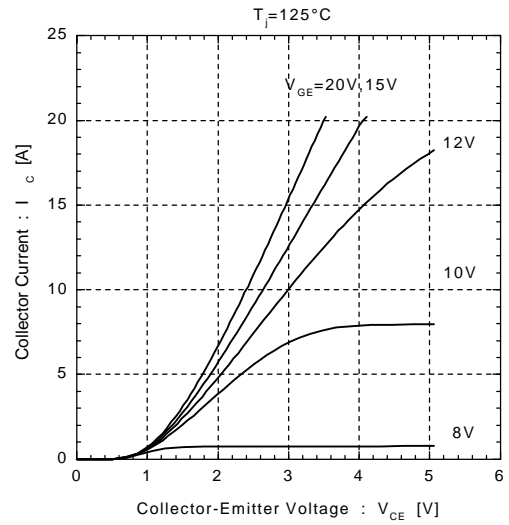
### • Thermal Characteristics

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance	R <sub>th(j-c)</sub>				1.66	°C/W

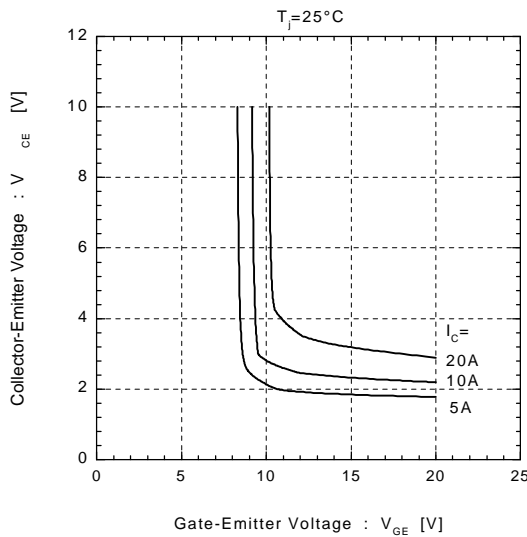
Collector Current vs. Collector-Emittor Voltage



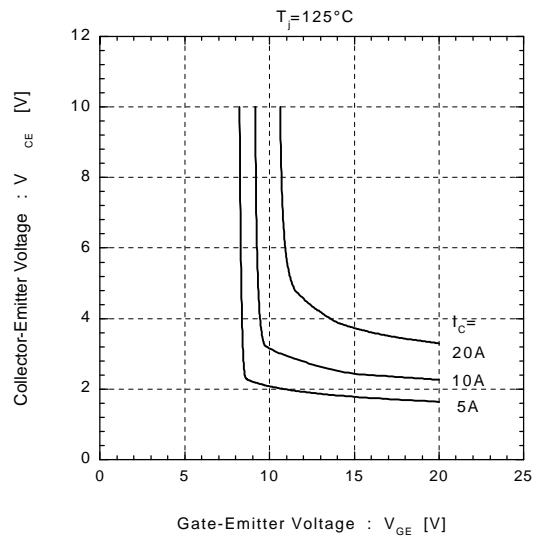
Collector Current vs. Collector-Emittor Voltage



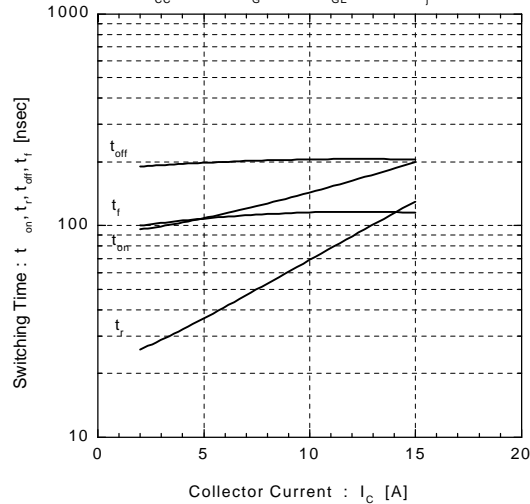
Collector-Emittor Voltage vs. Gate-Emittor Voltage



Collector-Emittor Voltage vs. Gate-Emittor Voltage



Switching Time vs. Collector Current  
 $V_{CC}=300\text{V}, R_G=22\Omega, V_{GE}=\pm 15\text{V}, T_J=25^\circ\text{C}$



Switching Time vs. Collector Current  
 $V_{CC}=300\text{V}, R_G=22\Omega, V_{GE}=\pm 15\text{V}, T_J=125^\circ\text{C}$

