

Fuji Discrete Package IGBT

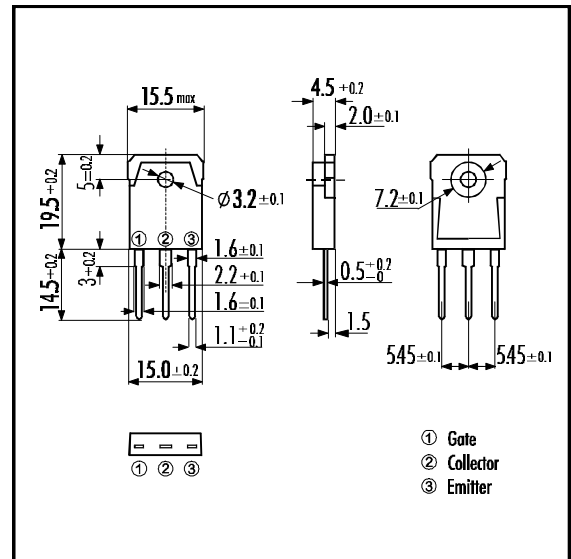
■ Features

- 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

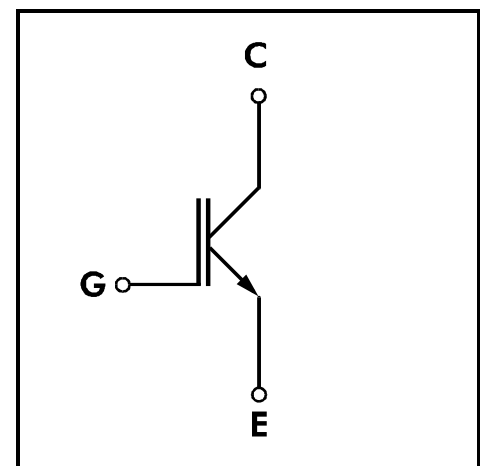


■ Maximum Ratings and Characteristics

• Absolute Maximum Ratings (T_c=25°C)

Items	Symbols	Ratings	Units
Collector-Emitter Voltage	V _{CES}	600	V
Gate -Emitter Voltage	V _{GES}	± 20	V
Collector Current	DC T _c = 25°C	I _{C 25}	38
	DC T _c =100°C	I _{C 100}	20
	1ms T _c = 25°C	I _{C PULSE}	152
IGBT Max. Power Dissipation	P _C	145	W
Operating Temperature	T _i	+150	°C
Storage Temperature	T _{stg}	-40 ~ +150	°C
Mounting Screw Torque		50	Nm

■ Equivalent Circuit



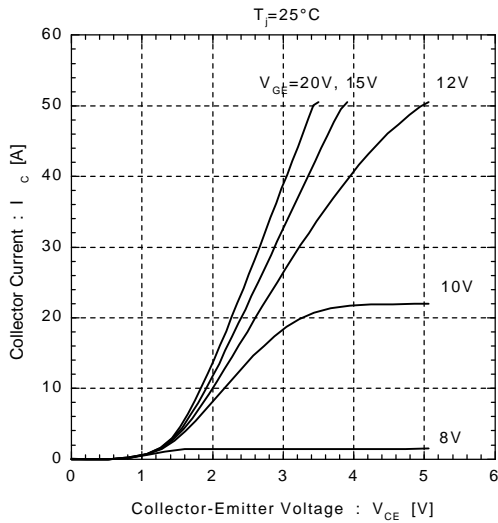
• Electrical Characteristics (at T_F=25°C)

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

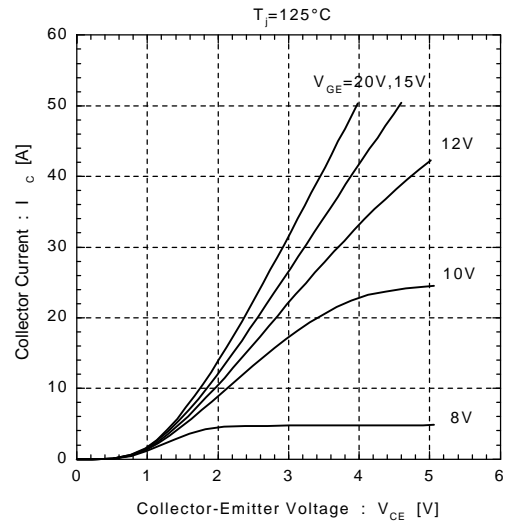
• Thermal Characteristics

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance	R _{th(j-c)}				0.86	

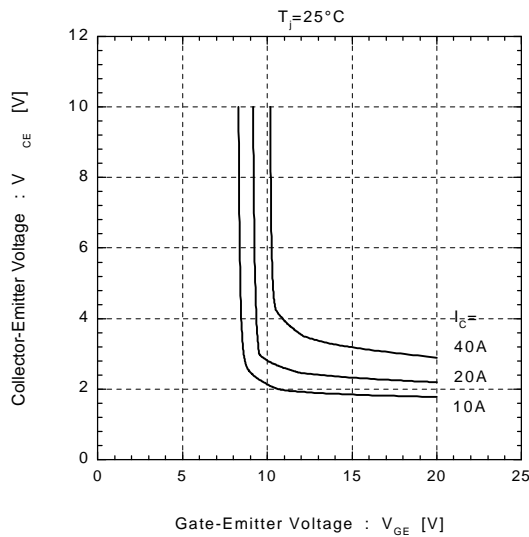
Collector Current vs. Collector-Emitter Voltage



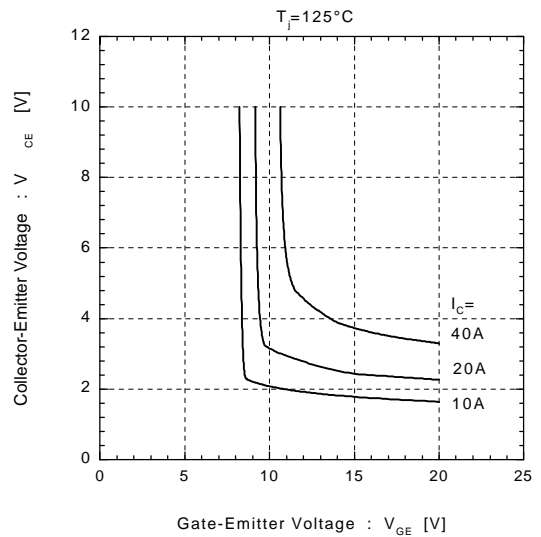
Collector Current vs. Collector-Emitter Voltage



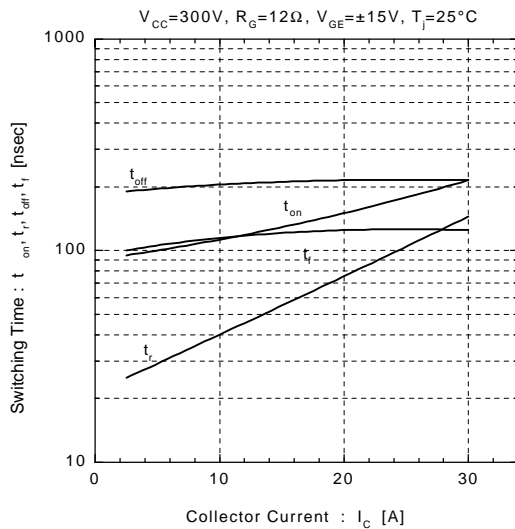
Collector-Emitter Voltage vs. Gate-Emitter Voltage



Collector-Emitter Voltage vs. Gate-Emitter Voltage



Switching Time vs. Collector Current



Switching Time vs. Collector Current

