

GT60N323

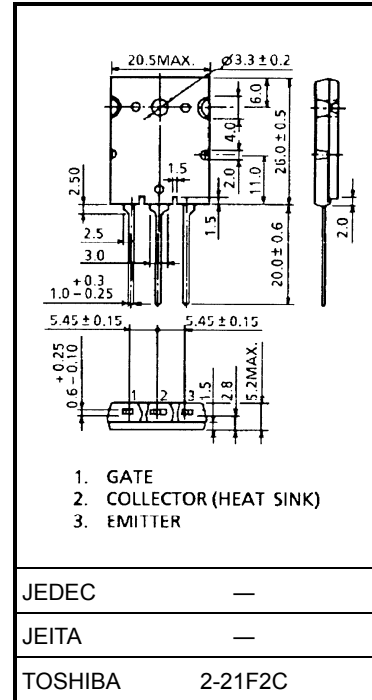
Voltage Resonance Inverter Switching Application

Unit: mm

- diode included between emitter and collector
- Enhancement mode type
- High speed IGBT : $t_f = 0.19 \mu s$ (typ.) ($I_C = 60 A$)
 diode : $t_{rr} = 0.35 \mu s$ (max.) ($di/dt = -200 A/\mu s$)

Absolute Maximum Ratings ($T_a = 25^\circ C$)

Characteristics	symbol	Rating	Unit
Collector-Emitter Voltage	V_{CES}	1050	V
Gate-Emitter Voltage	V_{GES}	± 25	V
Collector Current	DC	I_C	60
	1 ms	I_{CP}	120
Diode forward current	DC	I_F	25
	1 ms	I_{FP}	50
Collector Power Dissipation ($T_c = 25^\circ C$)	P_C	190	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55~150	$^\circ C$
Screw Torque	—	0.8	N·m

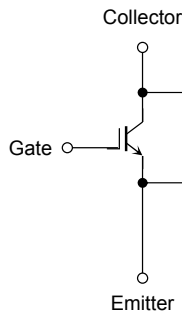


Weight: 9.75 g (typ.)

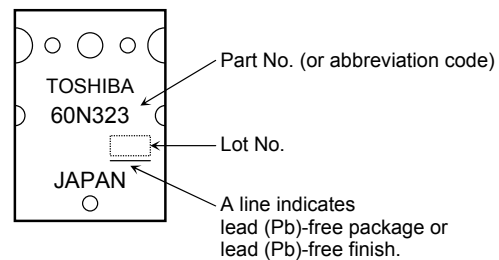
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Equivalent Circuit



Marking



Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate Leakage Current		I_{GES}	$V_{GE} = \pm 25 \text{ V}, V_{CE} = 0$	—	—	± 500	nA
Collector Cut-off Current		I_{CES}	$V_{CE} = 1050 \text{ V}, V_{GE} = 0$	—	—	1.0	mA
Gate-Emitter Cut-off Voltage		$V_{GE (OFF)}$	$I_C = 60 \text{ mA}, V_{CE} = 5 \text{ V}$	6.0	—	9.0	V
Collector-Emmitter Saturation Voltage		$V_{CE (sat) (1)}$	$I_C = 10 \text{ A}, V_{GE} = 15 \text{ V}$	—	2.2	2.8	V
Collector-Emmitter Saturation Voltage		$V_{CE (sat) (2)}$	$I_C = 60 \text{ A}, V_{GE} = 15 \text{ V}$	—	2.7	3.3	V
Input Capacitance		C_{ies}	$V_{CE} = 10 \text{ V}, V_{GE} = 0, f = 1 \text{ MHz}$	—	6800	—	pF
Switching Time	Rise Time	t_r		—	0.4	—	μs
	Turn-on Time	t_{on}		—	0.6	—	
	Fall Time	t_f		—	0.19	0.25	
	Turn-off Time	t_{off}		—	0.5	—	
Diode forward voltage		V_F	$I_F = 25 \text{ A}, V_{GE} = 0$	—	—	3.0	V
Reverse Recovery Time		t_{rr}	$I_F = 25 \text{ A}, V_{GE} = 0, di/dt = -200 \text{ A}/\mu\text{s}$	—	—	0.35	μs
Thermal Resistance (IGBT)		$R_{th(j-c)}$	—	—	—	0.66	$^{\circ}\text{C}/\text{W}$
Thermal Resistance (diode)		$R_{th(j-c)}$	—	—	—	1.38	$^{\circ}\text{C}/\text{W}$

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20070701-EN

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