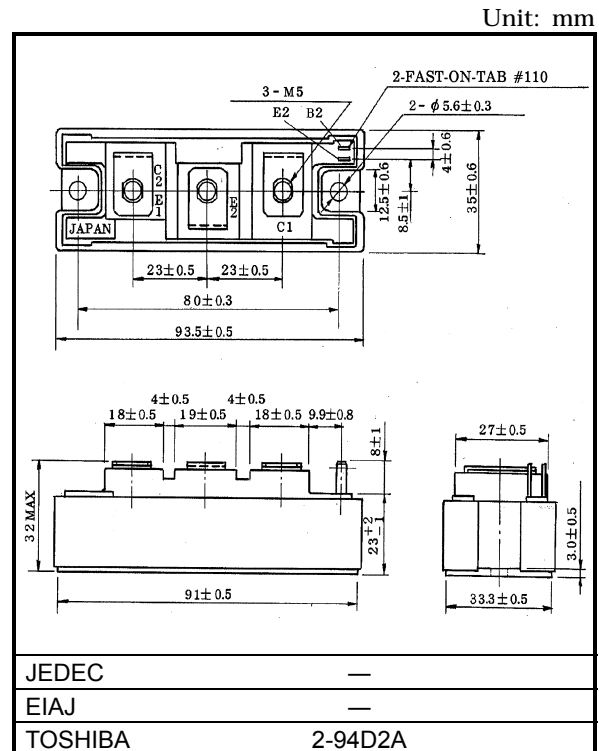
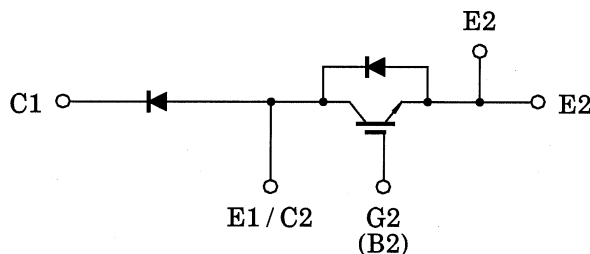


MG75J1ZS40

High Power Switching Applications
Motor Control Applications

- High input impedance
- High speed : $t_f = 0.35\mu s$ (Max)
 $t_{rr} = 0.15\mu s$ (Max)
- Low saturation voltage : $V_{CE(sat)} = 3.5V$ (Max)
- Enhancement-mode
- The electrodes are isolated from case.

Equivalent Circuit



Weight: 202g

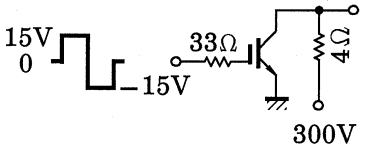
Maximum Ratings ($T_a = 25^\circ C$)

Characteristic		Symbol	Rating	Unit
Collector-emitter voltage		V_{CES}	600	V
Gate-emitter voltage		V_{GES}	± 20	V
Collector current	DC	I_C	75	A
	1ms	I_{CP}	150	
Forward current	DC	I_F	75	A
	1ms	I_{FM}	150	
Collector power dissipation ($T_c = 25^\circ C$)		P_C	350	W
Junction temperature		T_j	150	$^\circ C$
Storage temperature range		T_{stg}	$-40 \sim 125$	$^\circ C$
Isolation voltage		V_{isol}	2500 (AC, 1 minute)	V
Screw torque (Terminal / mounting)		—	3 / 3	N·m

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• TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
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Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GES}	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	± 500	nA
Collector cut-off current		I_{CES}	$V_{CE} = 600V, V_{GE} = 0$	—	—	1.0	mA
Collector-emitter breakdown voltage		$V_{(BR)CES}$	$I_C = 10mA, V_{GE} = 0$	600	—	—	V
Gate-emitter cut-off voltage		$V_{GE(off)}$	$I_C = 75mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 75A, V_{GE} = 15V$	—	2.7	3.5	V
Input capacitance		C_{ies}	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	6800	—	pF
Switching time	Rise time	t_r		—	0.30	0.60	μs
	Turn-on time	t_{on}		—	0.40	0.80	
	Fall time	t_f		—	0.18	0.35	
	Turn-off time	t_{off}		—	0.60	1.00	
Forward voltage		V_F	$I_F = 75A, V_{GE} = 0$	—	1.7	2.5	V
Reverse recovery time		t_{rr}	$I_F = 75A, V_{GE} = -10V, di/dt = 100A/\mu s$	—	0.08	0.15	μs
Thermal resistance		$R_{th(j-c)}$	Transistor	—	—	0.35	°C / W
			Diode	—	—	0.83	

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