

TOSHIBA Transistor Silicon NPN Triple Diffused Type

2SD2440

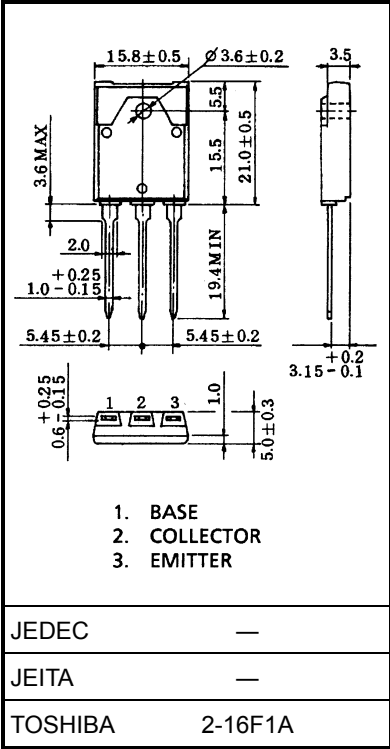
Switching Application

- High breakdown voltage: $V_{CBO} = 100\text{ V}$
: $V_{EBO} = 18\text{ V}$
- Low saturation voltage: $V_{CE(sat)} = 1.2\text{ V (max)}$ ($I_C = 5\text{ A}$, $I_B = 1\text{ A}$)
- High speed: $t_f = 1\text{ }\mu\text{s (typ.)}$ ($I_C = 5\text{ A}$, $I_B = \pm 0.5\text{ A}$)
- High DC current gain: $h_{FE} = 200\text{ (min)}$ ($V_{CE} = 5\text{ V}$, $I_C = 0.5\text{ A}$)

Maximum Ratings (Ta = 25°C)

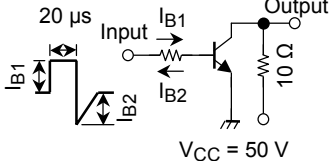
Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	100	V
Collector-emitter voltage		V_{CEO}	60	V
Emitter-base voltage		V_{EBO}	18	V
Collector current	DC	I_C	6	A
	Pulse	I_{CP}	12	
Base current		I_B	2	A
Collector power dissipation (Tc = 25°C)		P_C	40	W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-55 to 150	°C

Unit: mm



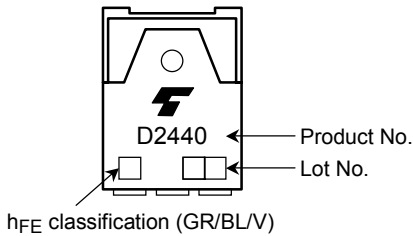
Weight: 5.8 g (typ.)

Electrical Characteristics (Ta = 25°C)

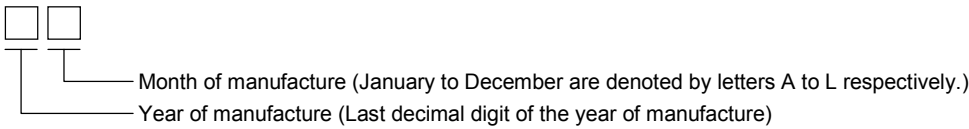
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		ICBO	V _{CB} = 100 V, I _E = 0	—	—	10	μA
Collector cut-off current		ICER	V _{CE} = 80 V, R _{BE} = 50 Ω	—	—	5	mA
Emitter cut-off current		IEBO	V _{EB} = 15 V, I _C = 0	—	—	2	μA
Collector-emitter breakdown voltage		V _(BR) CEO	I _C = 50 mA, I _B = 0	60	—	—	V
DC current gain	h _{FE} (1) (Note)		V _{CE} = 5 V, I _C = 0.5 A	200	—	900	
	h _{FE} (2)		V _{CE} = 5 V, I _C = 5 A	20	—	100	
Collector-emitter saturation voltage		V _{CE} (sat)	I _C = 5 A, I _B = 1 A	—	—	1.2	V
Base-emitter saturation voltage		V _{BE} (sat)	I _C = 5 A, I _B = 1 A	—	—	2.5	V
Transition frequency		f _T	V _{CE} = 10 V, I _C = 0.5 A	—	5	—	MHz
Collector output capacitance		C _{ob}	V _{CB} = 10 V, I _E = 0, f = 1 MHz	—	71	—	pF
Switching time	Turn-on time	t _{on}	 I _{B1} = -I _{B2} = 0.5 A, duty cycle ≤ 1%	—	1	2	μs
	Storage time	t _{stg}		—	2	4	
	Fall time	t _f		—	1	3	

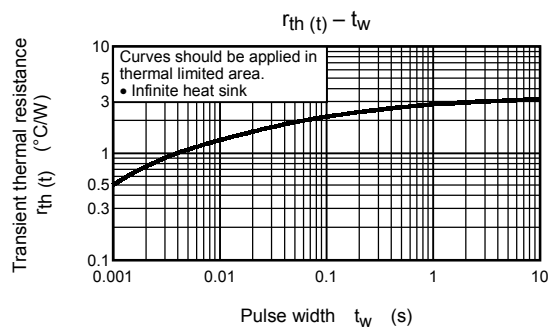
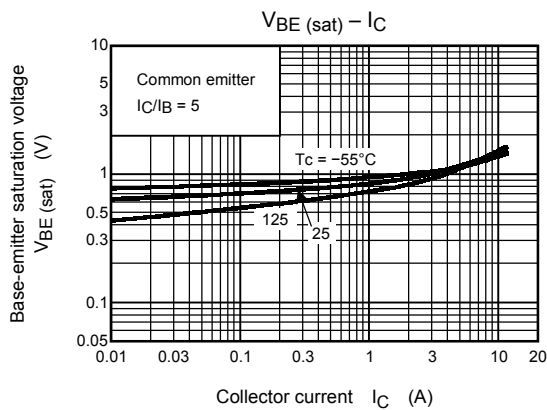
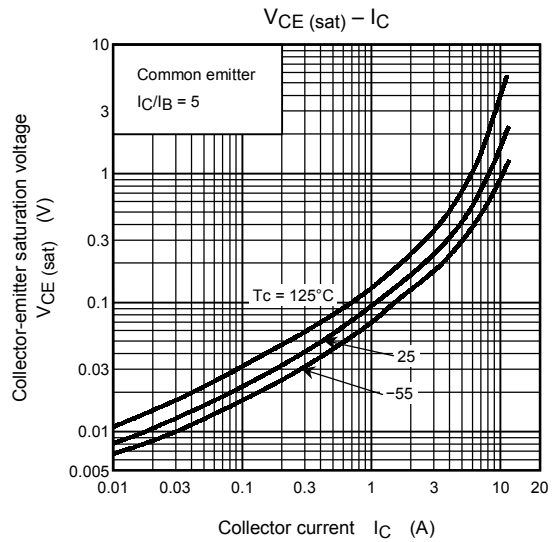
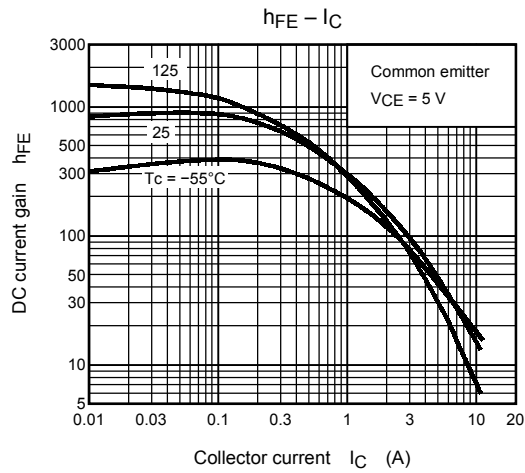
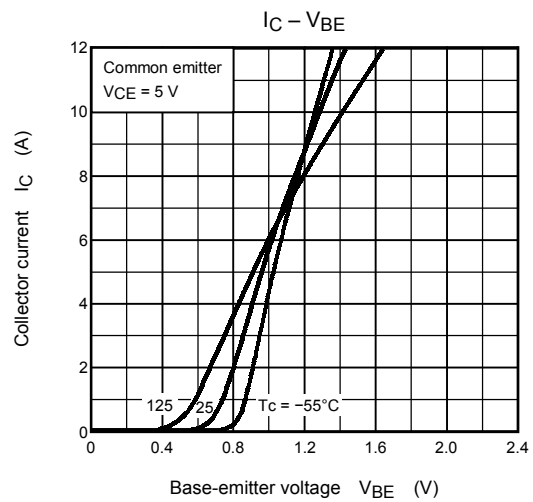
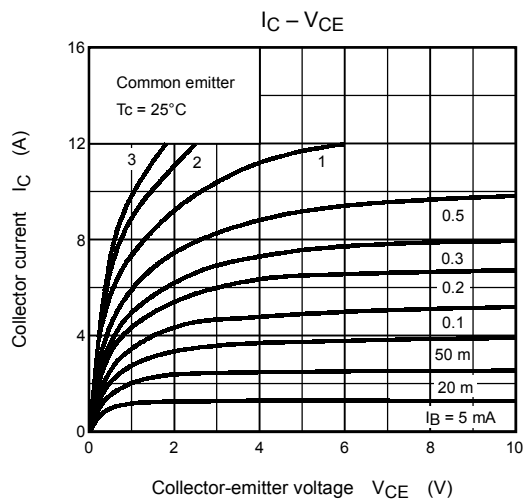
Note: h_{FE} (1) classification GR: 200 to 400, BL: 300 to 600, V: 450 to 900

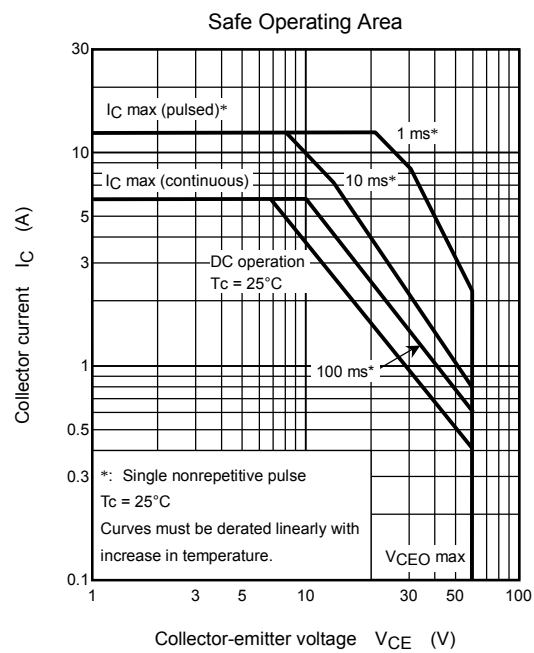
Marking



Explanation of Lot No.







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