

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

2SD2075A

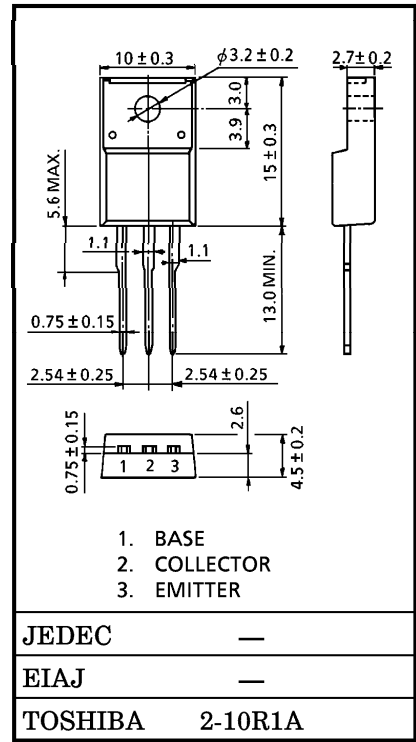
HIGH CURRENT SWITCHING APPLICATIONS
LAMP, SOLENOID DRIVE APPLICATIONS

INDUSTRIAL APPLICATIONS
Unit in mm

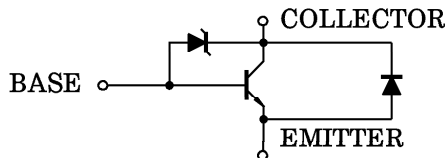
- High DC Current Gain : $h_{FE} = 500 \sim 1500$ ($I_C = 1A$)
- Low Collector Saturation Voltage : $V_{CE(sat)} = 0.3V$ (Max.) ($I_C = 5A$)

MAXIMUM RATINGS ($T_a = 25^\circ C$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	60 ± 10	V
Collector-Emitter Voltage		V_{CEO}	60 ± 10	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	10	A
	Pulse	I_{CP}	15	
Base Current		I_B	2	A
Collector Power	$T_a = 25^\circ C$	P_C	2.0	W
Dissipation	$T_c = 25^\circ C$		30	
Junction Temperature		T_j	150	$^\circ C$
Storage Temperature Range		T_{stg}	$-55 \sim 150$	$^\circ C$



EQUIVALENT CIRCUIT

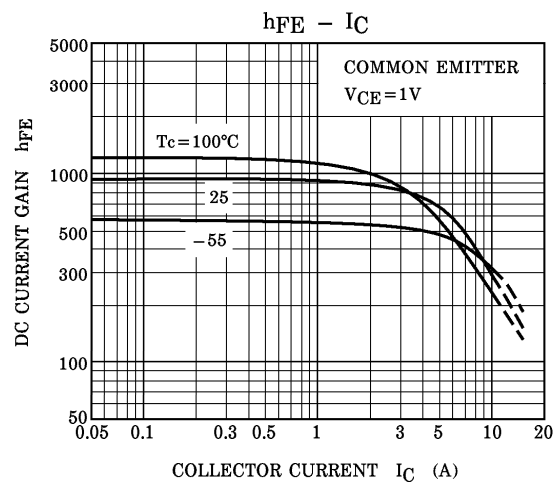
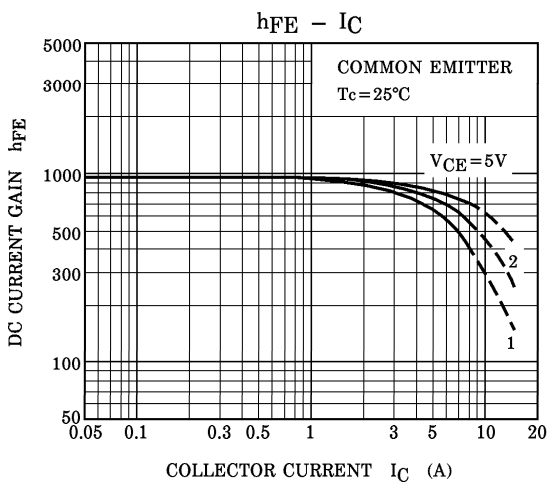
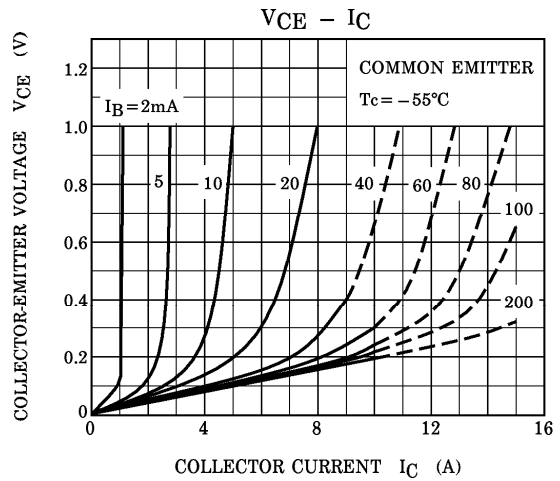
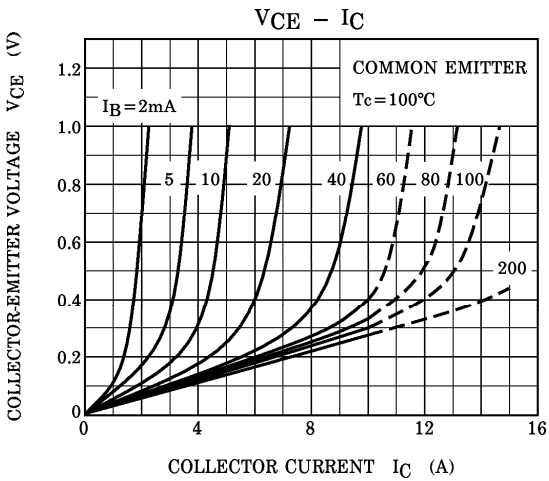
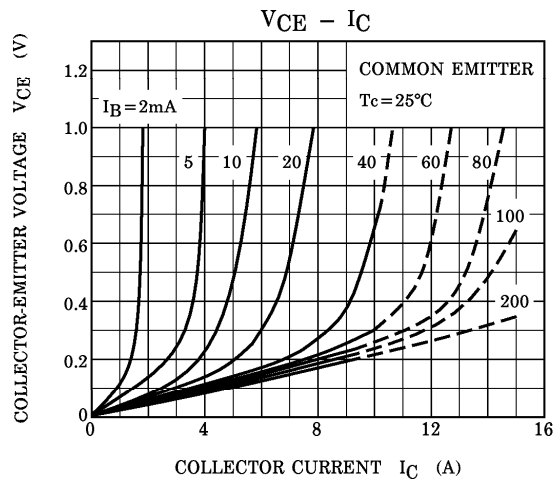
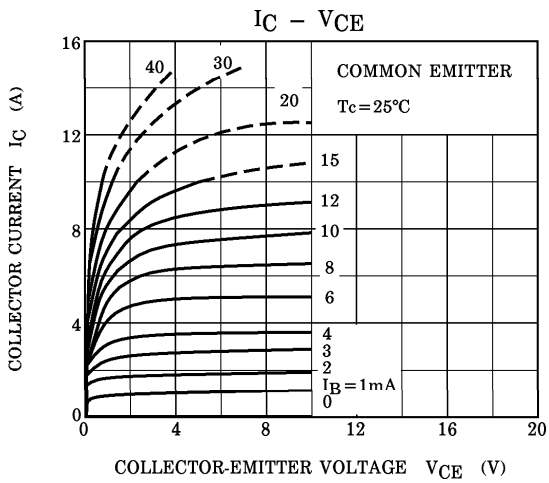


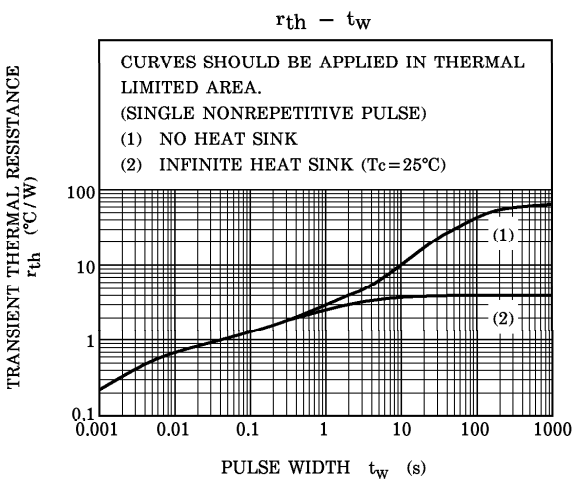
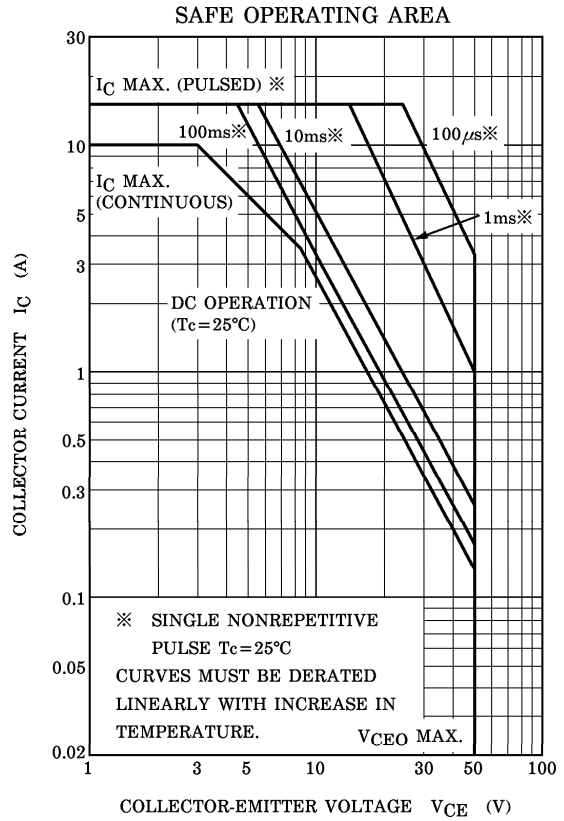
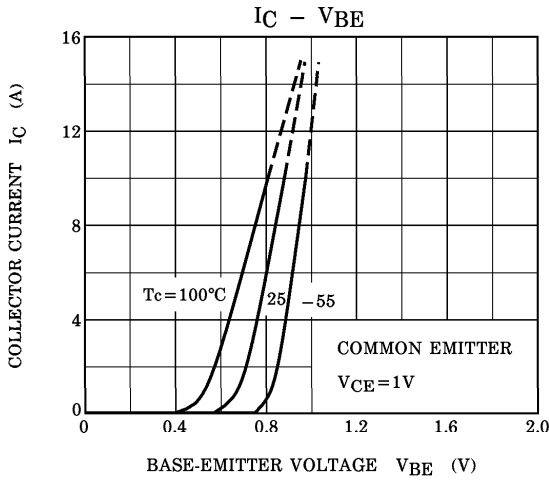
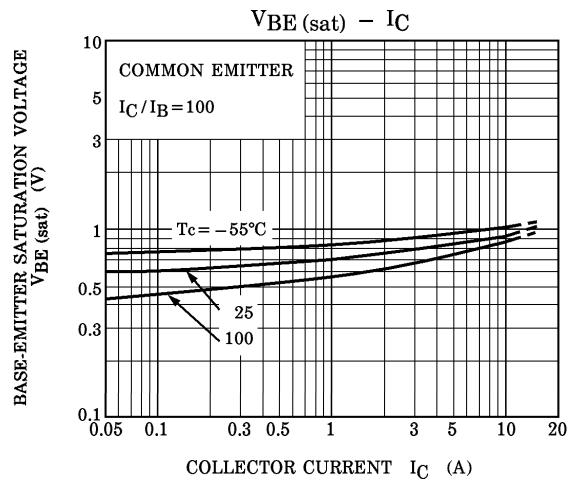
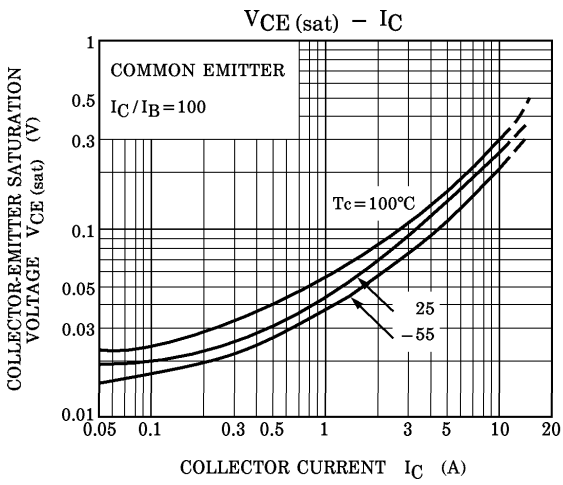
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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 45V, I_E = 0$	—	—	10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 7V, I_C = 0$	—	—	10	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = 50mA, I_B = 0$	50	60	70	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 1V, I_C = 1A$	500	—	1500	
		$h_{FE(2)}$	$V_{CE} = 1V, I_C = 5A$	150	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 5A, I_B = 0.05A$	—	—	0.3	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = 5A, I_B = 0.05A$	—	—	1.2	V
Collector-Emitter Forward Voltage		V_{ECF}	$I_C = 5A, I_B = 0$	—	—	2.0	V
Transition Frequency		f_T	$V_{CE} = 5V, I_C = 1A$	—	90	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	140	—	pF
Switching Time	Turn-on Time	t_{on}	<p> $I_{B1} = -I_{B2} = 0.05A,$ $DUTY\ CYCLE \leq 1\%$ $V_{CC} = 30V$ </p>	—	0.5	—	μs
	Storage Time	t_{stg}		—	2.0	—	
	Fall Time	t_f		—	—	0.6	





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