

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (DRALINGTON POWER TRANSISTOR)

2SD2271

MOTOR DRIVE APPLICATIONS

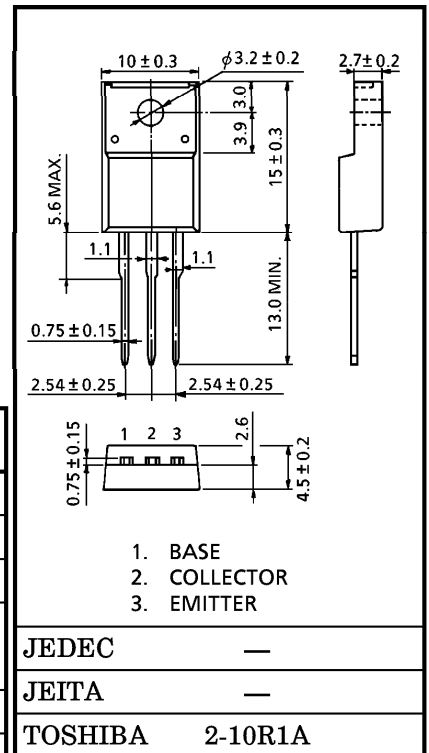
HIGH CURRENT SWITCHING APPLICATIONS

- High DC Current Gain : $h_{FE} = 500$ (Min.) ($V_{CE} = 2V, I_C = 5A$)
- High Breakdown Voltage : $V_{CEO} (SUS) = 200V$ (Min.)

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	300	V
Collector-Emitter Voltage		V_{CEO}	200	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	± 12	A
	Pulse	I_{CP}	± 18	
Base Current		I_B	1	A
Collector Power Dissipation	$T_a = 25^\circ C$	P_C	2.0	W
	$T_c = 25^\circ C$		30	
Junction Temperature		T_j	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55~150	$^\circ C$

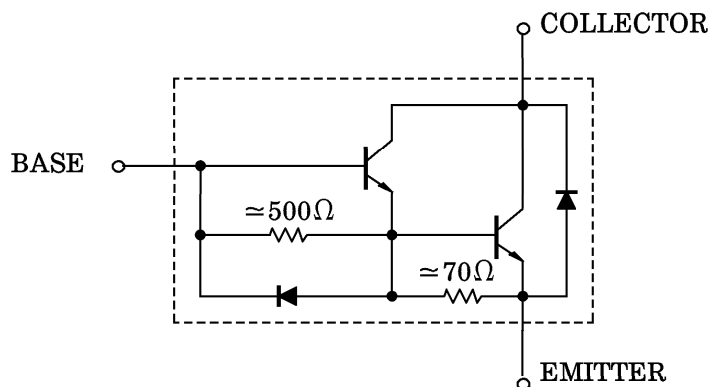
Unit in mm



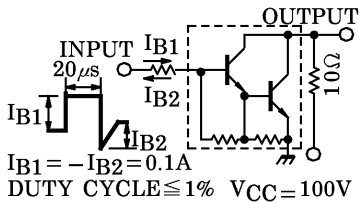
JEDEC	—
JEITA	—
TOSHIBA	2-10R1A

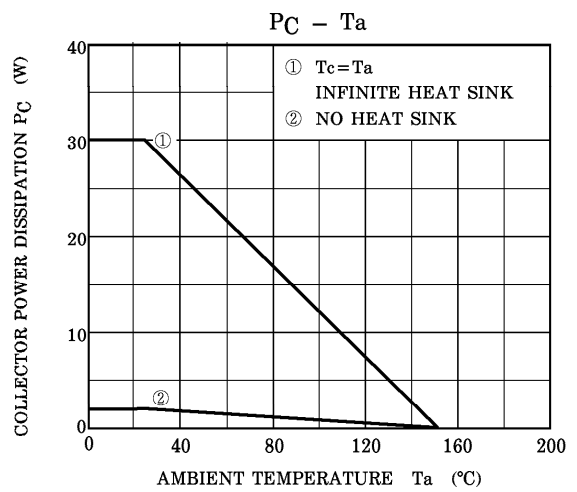
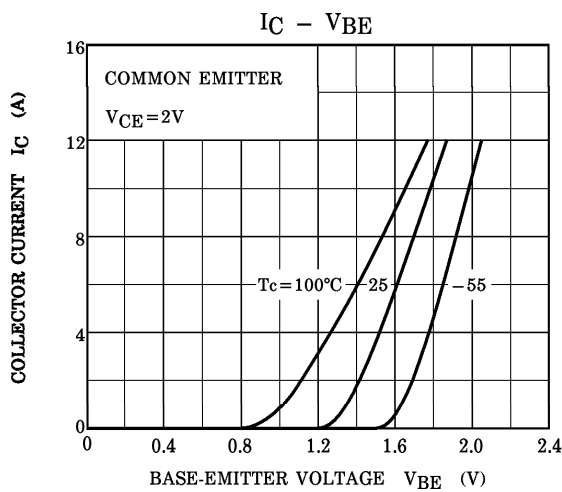
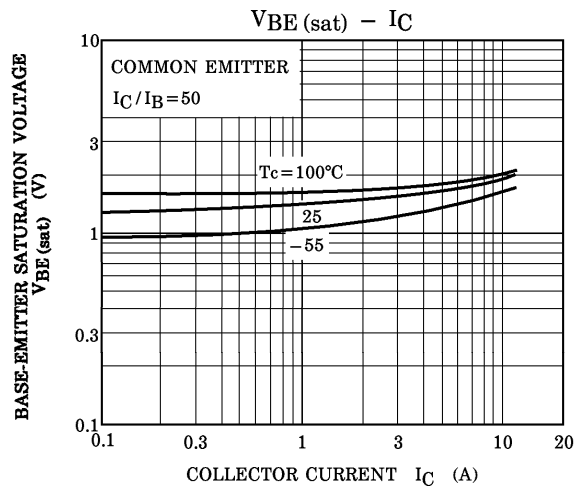
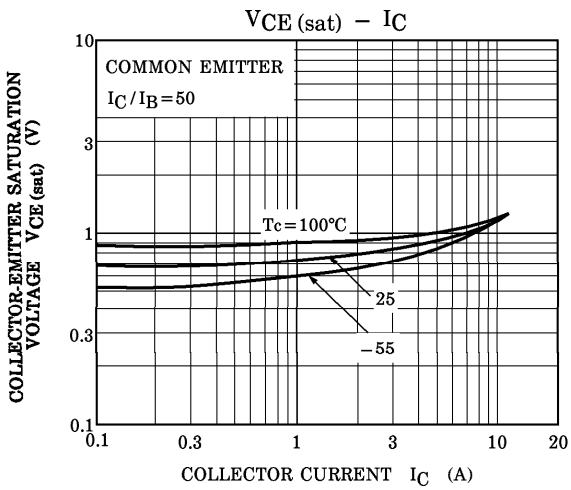
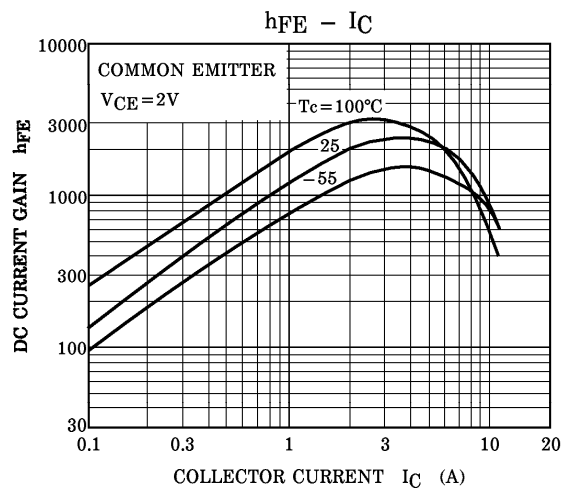
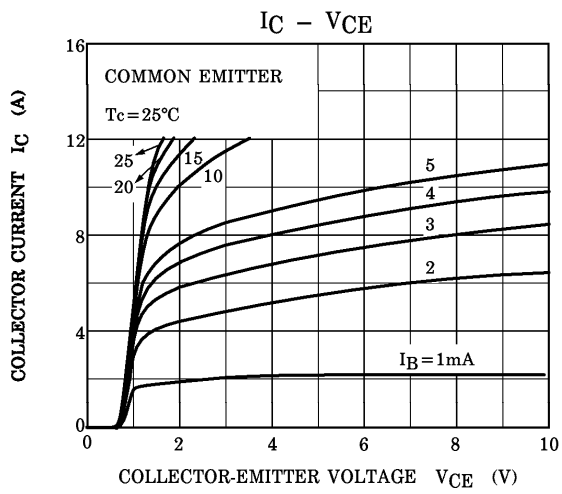
Weight : 1.7g (Typ.)

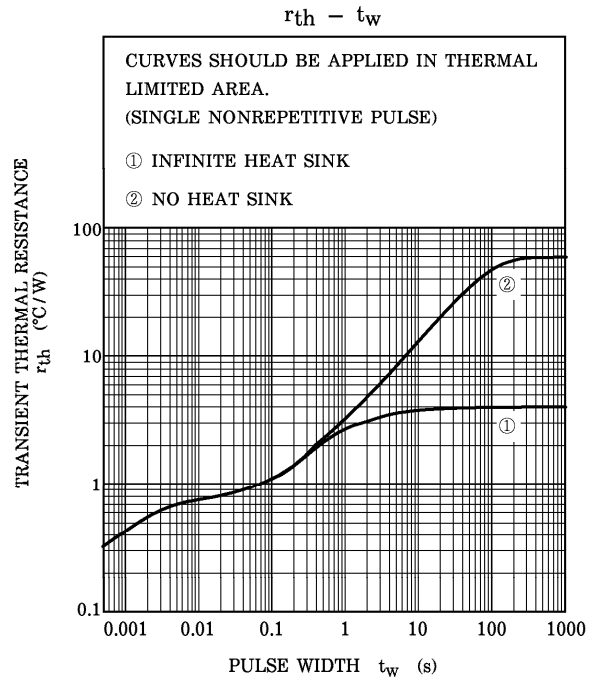
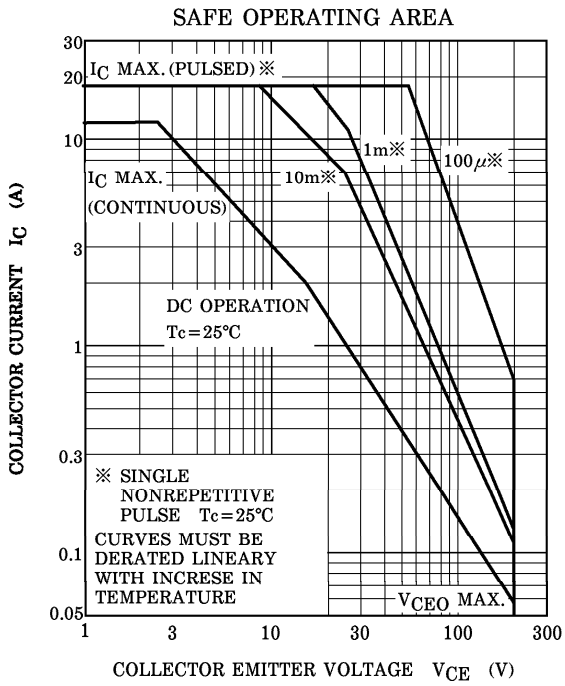
EQUIVALENT CIRCUIT



ELECTRICAL CHARACTERISTICS (Tc = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 300V, I_E = 0$	—	—	100	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 6V, I_C = 0$	50	—	150	mA
Collector-Base Breakdown Voltage		$V(BR)_{CBO}$	$I_C = 1mA, I_E = 0$	300	—	—	V
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	$I_C = 0.25A, L = 40mH$	200	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 2V, I_C = 5A$	500	—	5000	
		$h_{FE(2)}$	$V_{CE} = 2V, I_C = 10A$	100	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 10A, I_B = 0.1A$	—	—	2.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = 10A, I_B = 0.1A$	—	—	2.3	V
Emitter-Collector Forward Voltage		V_{ECF}	$I_E = 10A, I_B = 0$	—	1.5	2.0	V
Transition Frequency		f_T	$V_{CE} = 2V, I_C = 1A$	—	40	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	200	—	pF
Switching Time	Turn-on Time	t_{on}	 <p> $I_{B1} = -I_{B2} = 0.1A$ DUTY CYCLE $\leq 1\%$ $V_{CC} = 100V$ </p>	—	—	1.0	μs
	Storage Time	t_{stg}		—	—	12	
	Fall Time	t_f		—	—	2.0	





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