

**TOSHIBA**

**2SD2271**

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

# 2SD2271

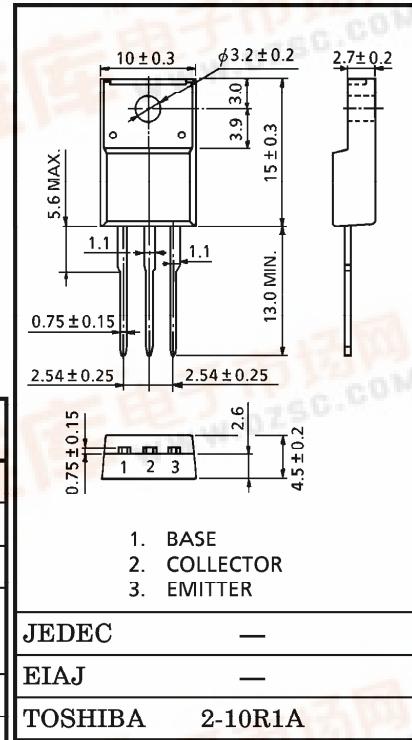
MOTOR DRIVE APPLICATIONS

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 ( $T_a = 25^\circ C$ )

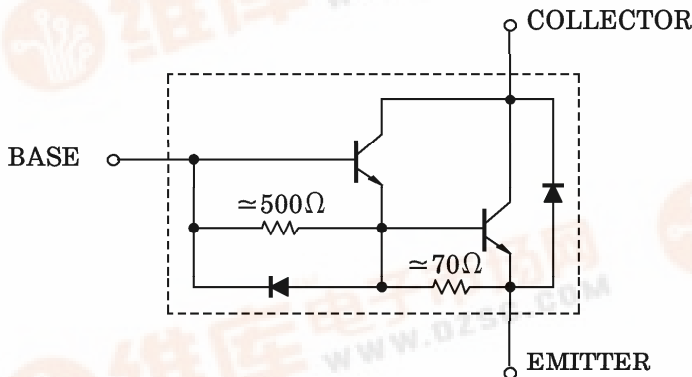
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	300	V
Collector-Emitter Voltage	$V_{CEO}$	200	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	DC	$I_C$	$\pm 12$
	Pulse	$I_{CP}$	$\pm 18$
Base Current	$I_B$	1	A
Collector Power Dissipation	$T_a = 25^\circ C$	$P_C$	2.0
	$T_c = 25^\circ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



JEDEC	—
EIAJ	—
TOSHIBA	2-10R1A

Weight : 1.7g

EQUIVALENT CIRCUIT

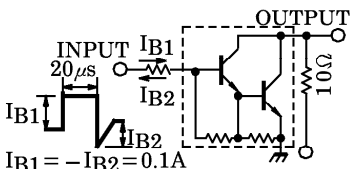


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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB} = 300V, I_E = 0$	—	—	100	$\mu A$
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> <math>I_{B1} = -I_{B2} = 0.1A</math>                      DUTY CYCLE <math>\leq 1\%</math> <math>V_{CC} = 100V</math> </p>	—	—	1.0	$\mu s$
	Storage Time	$t_{stg}$		—	—	12	
	Fall Time	$t_f$		—	—	2.0	

