

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (DARLINGTON)

# 2SD1525

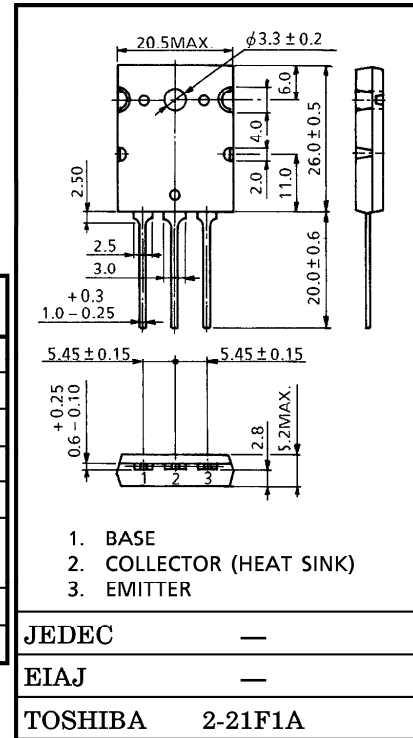
HIGH CURRENT SWITCHING APPLICATIONS

Unit in mm

- High Collector Current :  $I_C=30A$
- High DC Current Gain :  $h_{FE}(1)=1000$  (Min.)
- Monolithic Construction with Built-In Base-Emitter Shunt Resistor.

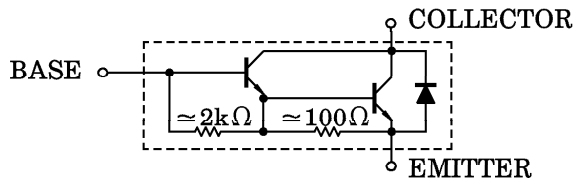
MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	100	V
Collector-Emitter Voltage	$V_{CEO}$	100	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	30	A
Base Current	$I_B$	5	A
Collector Power Dissipation ( $T_c = 25^\circ C$ )	$P_C$	150	W
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ C$



Weight : 9.8g (Typ.)

EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB} = 100V, I_E = 0$	—	—	100	$\mu A$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = 5V, I_C = 0$	—	—	10	mA
Collector-Emitter Breakdown Voltage		$V_{(BR) CEO}$	$I_C = 50mA, I_B = 0$	100	—	—	V
DC Current Gain		$h_{FE} (1)$	$V_{CE} = 5V, I_C = 20A$	1000	—	—	
		$h_{FE} (2)$	$V_{CE} = 5V, I_C = 30A$	200	—	—	
Collector-Emitter Saturation Voltage		$V_{CE} (sat)$	$I_C = 20A, I_B = 0.2A$	—	—	1.5	V
Base-Emitter Saturation Voltage		$V_{BE} (sat)$		—	—	2.5	V
Emitter-Collector Forward Voltage		$V_{ECF}$	$I_E = 10A, I_B = 0$	—	—	3	V
Transition Frequency		$f_T$	$V_{CE} = 5V, I_C = 1A$	—	10	—	MHz
Collector Output Capacitance		$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	500	—	pF
Switching Time	Turn-on Time	$t_{on}$	<p><math>V_{CC} = 50V</math>  <math>R = 10\Omega</math>  <math>I_{B1} = -I_{B2} = 0.01A</math>                      DUTY CYCLE <math>\leq 1\%</math></p>	—	1.5	—	$\mu s$
	Storage Time	$t_{stg}$		—	10	—	
	Fall Time	$t_f$		—	—	1.5	

