

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (DARLINGTON)

2SD1525

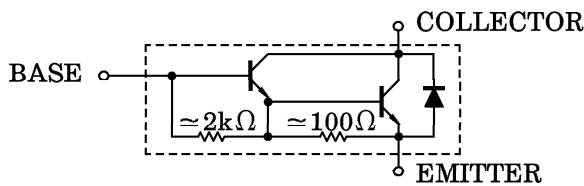
HIGH CURRENT SWITCHING APPLICATIONS

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

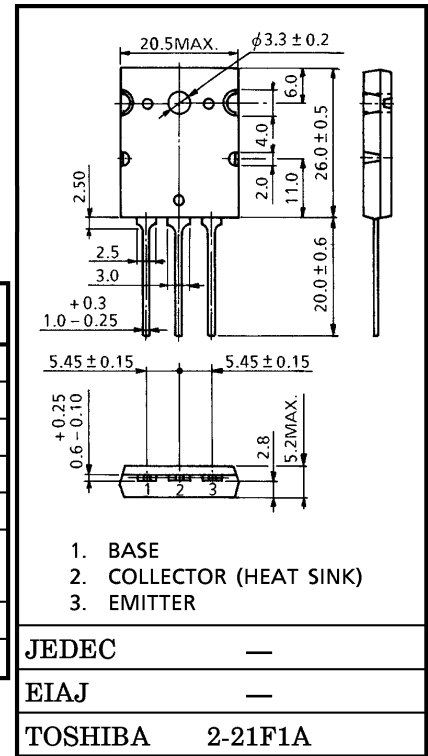
MAXIMUM RATINGS ($T_a = 25^\circ C$)

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	$^\circ C$

EQUIVALENT CIRCUIT



Unit in mm

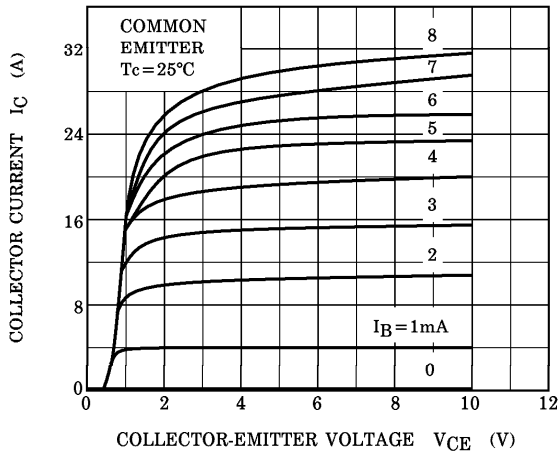


Weight : 9.8g (Typ.)

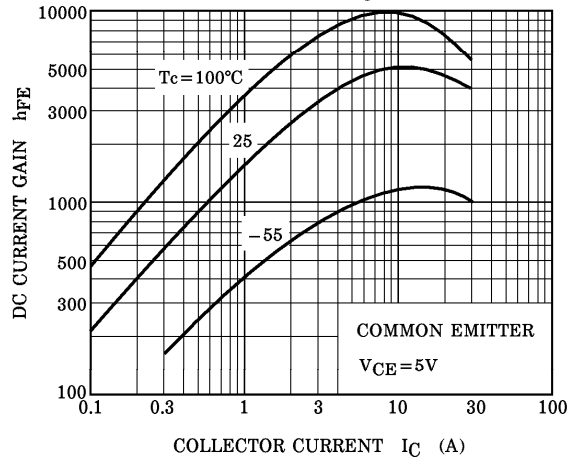
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 100V, I_E = 0$	—	—	100	μA
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>$V_{CC} = 50V, R = 10\Omega$</p> <p>$I_{B1}, I_{B2}$</p> <p>$IN-PUT, OUT-PUT$</p>	—	1.5	—	μs
	Storage Time	t_{stg}		—	10	—	
	Fall Time	t_f		$I_{B1} = -I_{B2} = 0.01A, DUTY\ CYCLE \leq 1\%$	—	1.5	

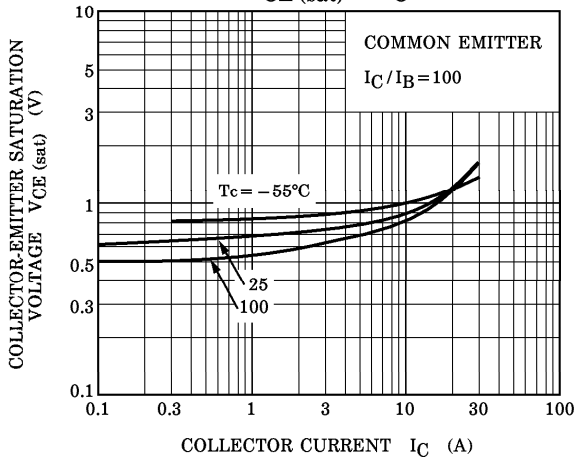
$I_C - V_{CE}$



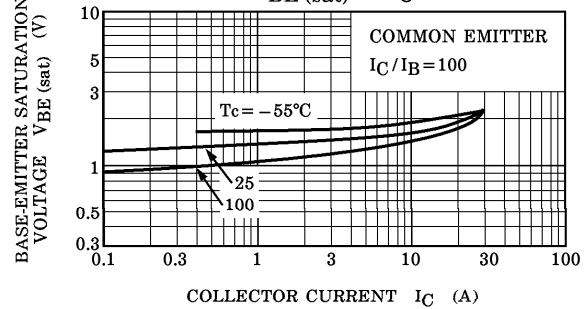
$h_{FE} - I_C$



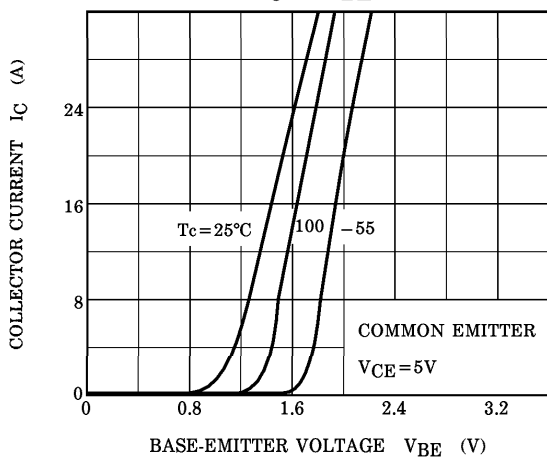
$V_{CE(sat)} - I_C$



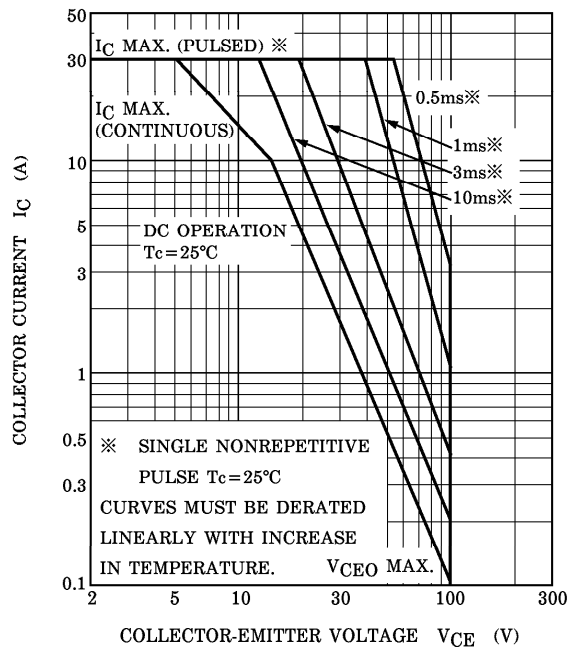
$V_{BE(sat)} - I_C$



$I_C - V_{BE}$



SAFE OPERATING AREA



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