

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (DARLINGTON)

# 2SD1314

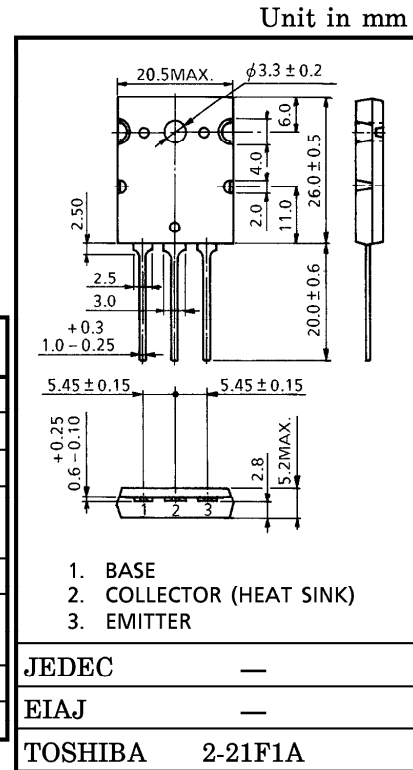
HIGH POWER SWITCHING APPLICATIONS.

MOTOR CONTROL APPLICATIONS.

- High DC Current Gain :  $h_{FE}=100$  (Min.)
- Low Saturation Voltage :  $V_{CE(sat)}=2V$  (Max.)
- High Speed :  $t_f=3\mu s$  (Max.)

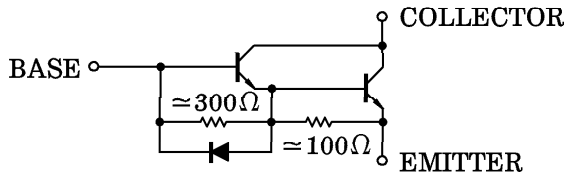
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	600	V
Collector-Emitter Voltage		$V_{CEO}$	450	V
Emitter-Base Voltage		$V_{EBO}$	6	V
Collector Current	DC	$I_C$	15	A
	Pulse	$I_{CP}$	30	
Base Current		$I_B$	1.0	A
Collector Power Dissipation (Tc = 25°C)		$P_C$	150	W
Junction Temperature		$T_j$	150	°C
Storage Temperature Range		$T_{stg}$	-55~150	°C



Weight : 9.75g (Typ.)

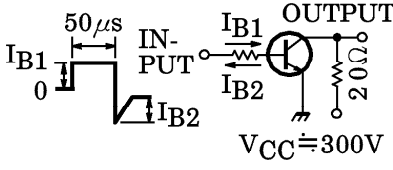
EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB} = 600V, I_E = 0$	—	—	1.0	mA
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = 6V, I_C = 0$	—	—	200	mA
Collector-Emitter Sustaining Voltage		$V_{CEO (SUS)}$	$I_C = 0.5A, L = 40mH$	450	—	—	V
DC Current Gain		$h_{FE}$	$V_{CE} = 5V, I_C = 15A$	100	—	—	
Collector-Emitter Saturation Voltage		$V_{CE (sat)}$	$I_C = 15A, I_B = 0.4A$	—	—	2.0	V
Base-Emitter Saturation Voltage		$V_{BE (sat)}$		—	—	2.5	V
Collector Output Capacitance		$C_{ob}$	$V_{CB} = 50V, I_E = 0, f = 1MHz$	—	150	—	pF
Switching Time	Turn-on Time	$t_{on}$	 <p><math>I_{B1} = -I_{B2} = 0.4A,</math> DUTY CYCLE = 0.5%</p>	—	—	1.0	$\mu s$
	Storage Time	$t_{stg}$		—	—	12	
	Fall Time	$t_f$		—	—	3.0	

