

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07811 D T-33-29

# 2SD842

SILICON NPNTIPLE DIFFUSED TYPE  
(DARLINGTON POWER)

HIGH CURRENT SWITCHING APPLICATIONS.

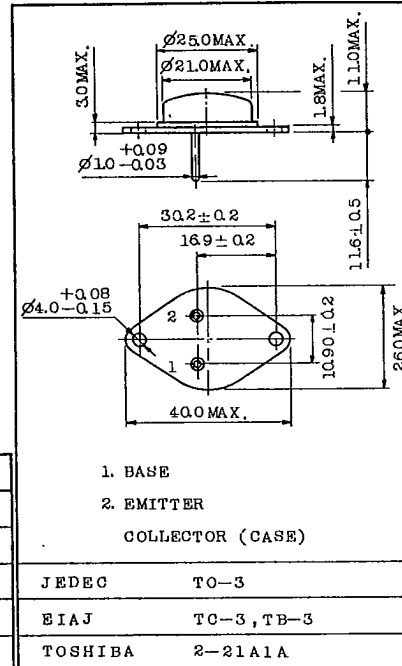
**FEATURES:**

- . High Collector Current :  $I_C = 30A$
- . High DC Current Gain  
:  $h_{FE}=1000(\text{Min.}), (V_{CE}=5V, I_C=20A)$
- . Monolithic Construction with Built-In Base-Emitter Shunt Resistor.

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

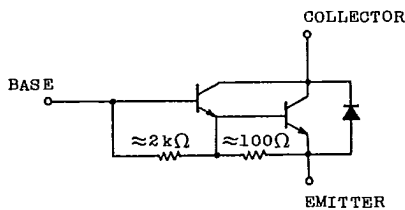
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	30	A
Base Current	$I_B$	1	A
Collector Power Dissipation ( $T_c=25^\circ C$ )	$P_C$	150	W
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-65 ~ 150	$^\circ C$

Unit in mm



Mounting kit No. AC73  
Weight : 12.9g

**EQUIVALENT CIRCUIT**



TOSHIBA CORPORATION

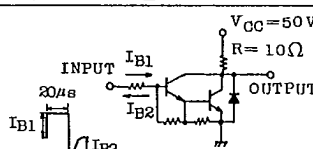
9097250 TOSHIBA (DISCRETE/OPTO)

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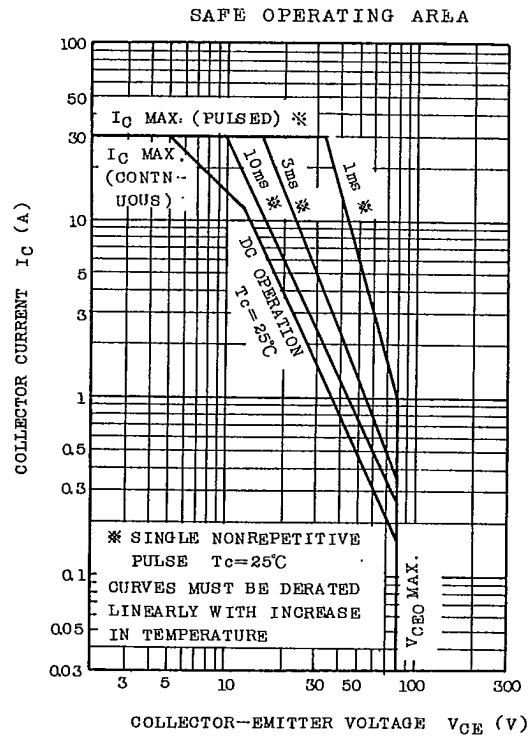
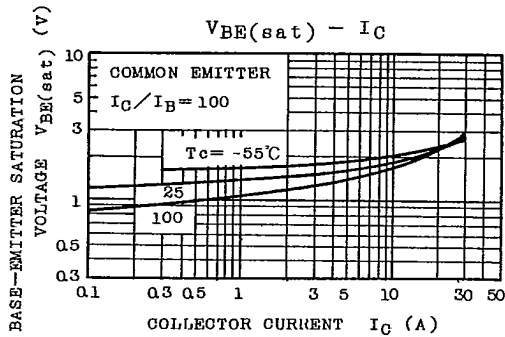
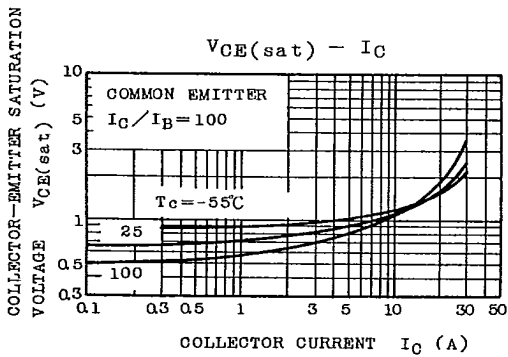
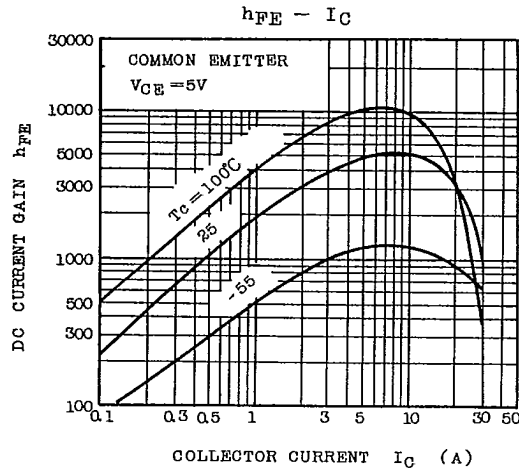
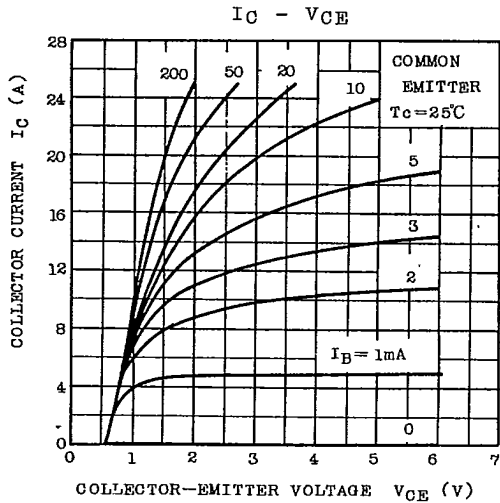
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## ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=80V, I_E=0$	-	-	100	$\mu A$	
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$	-	-	10	mA	
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=50mA, I_B=0$	80	-	-	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	$V_{CE(sat)}$	$I_C=20A, I_B=0.2A$	-	-	3	V	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-	-	3.5	V	
Emitter-Collector Forward Voltage	$V_{ECF}$	$I_E=10A, I_B=0$	-	-	3	V	
Transition Frequency	$f_T$	$V_{CE}=5V, I_C=1A$	-	14	-	MHz	
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$	-	280	-	pF	
Switching Time	Turn-on Time	$t_{on}$		-	0.7	-	$\mu s$
	Storage Time	$t_{stg}$		-	8	-	
	Fall Time	$t_f$		$I_{B1} = -I_{B2} = 0.01A$ DUTY CYCLE $\leq 1\%$	-	2.5	

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