2SD842

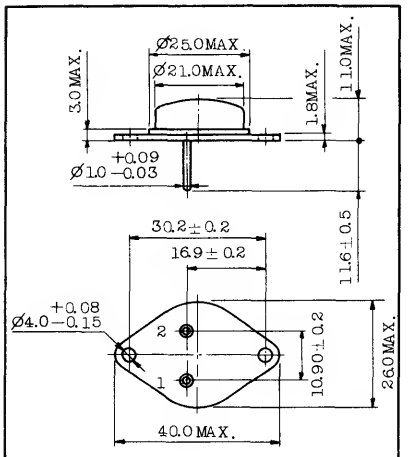
SILICON NPN TRIPLE DIFFUSED TYPE
(DARLINGTON POWER)

HIGH CURRENT SWITCHING APPLICATIONS.

FEATURES:

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

Unit in mm



1. BASE
2. EMITTER
COLLECTOR (CASE)

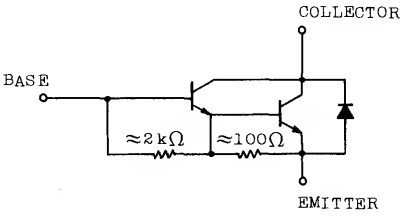
JEDEC	TO-3
EIAJ	TC-3, TB-3
TOSHIBA	2-21A1A

Mounting kit No. AC73
Weight : 12.9g

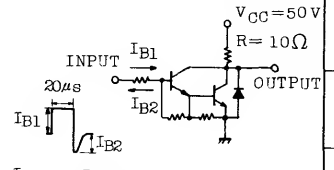
MAXIMUM RATINGS (Ta=25°C)

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 (Tc=25°C)	P_C	150	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-65 ~ 150	°C

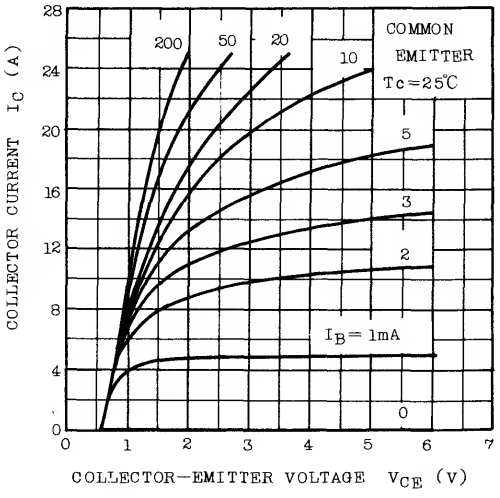
EQUIVALENT CIRCUIT



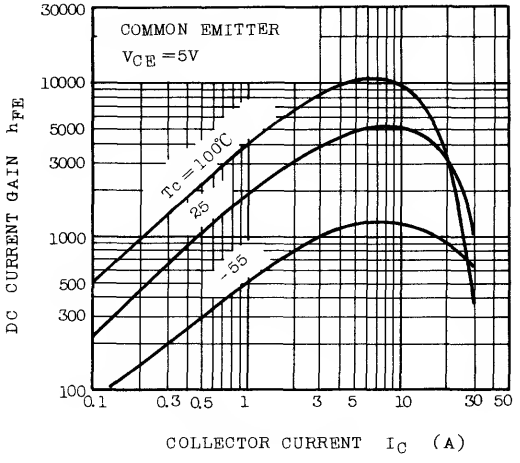
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=80V, I_E=0	-	-	100	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	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}	 I_{B1} = -I_{B2}=0.01A DUTY CYCLE≦1%	-	0.7	-	μs
	Storage Time	t_{stg}		-	8	-	
	Fall Time	t_f		-	2.5	-	

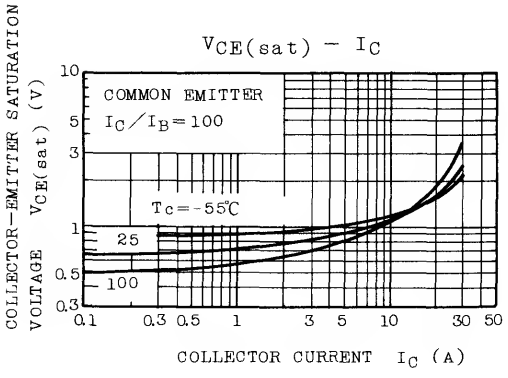
I_C – V_{CE}



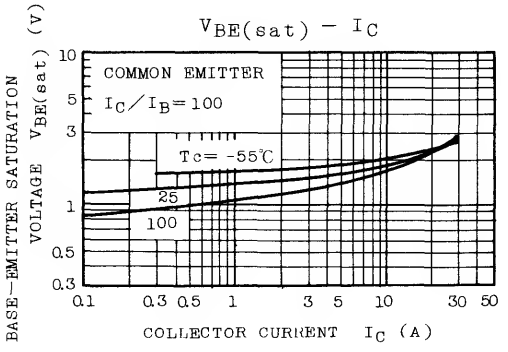
h_{FE} – I_C



$V_{CE(sat)}$ – I_C



$V_{BE(sat)}$ – I_C



SAFE OPERATING AREA