SILICON NPN TRIPLE DIFFUSED TYPE
(DARLINGTON POWER)

2SD523

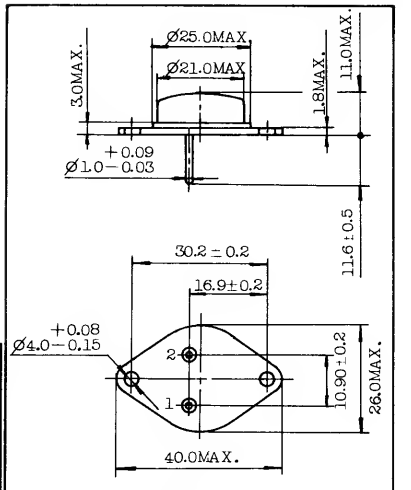
HIGH POWER SWITCHING APPLICATIONS.

INDUSTRIAL APPLICATIONS

FEATURES:

- High DC Current Gain
  : h_{FE}=2000 (Min.) (V_{CE}=3V, I_C=3A)
- Low Saturation Voltage
  : $V_{CE(sat)}$=1.5V (Max.) (I_C=3A)
- Monolithic Consturction With Built-In Base-Emitter Shunt Resistor.

Unit in mm



1. BASE
2. EMITTER
COLLECTOR (CASE)

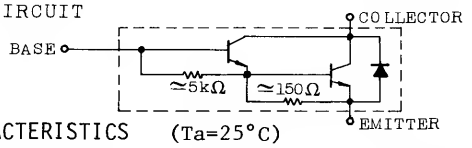
JEDEC	TO − 3
EIAJ	TC − 3, TB − 3
TOSHIBA	2 − 21A1A

Mounting Kit No. AC73
Weight : 12g

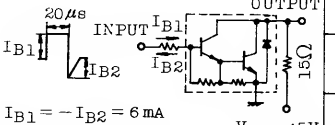
MAXIMUM RATINGS (Ta=25°C)

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	7	A
Base Current	I_B	0.2	A
Collector Power Dissipation (Tc=25°C)	P_C	50	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-65~150	°C

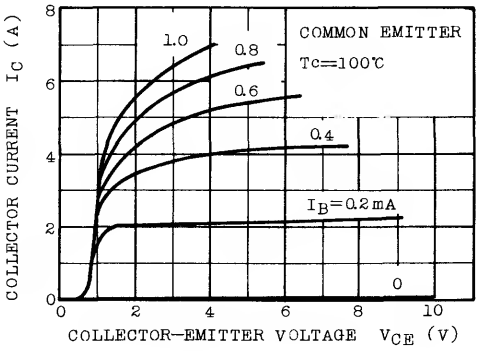
EQUIVALENT CIRCUIT



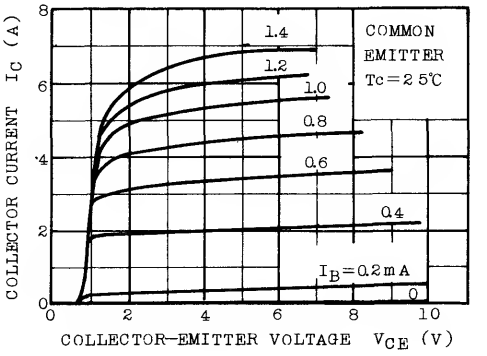
ELECTRICAL CHARACTERISTICS (Ta=25°C)

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	-	-	3	mA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=50mA, I_B=0	80	-	-	V
DC Current Gain		$h_{FE(1)}$	V_{CE}=3V, I_C=3A	2000	-	15000	
		$h_{FE(2)}$	V_{CE}=3V, I_C=7A	1000	-	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)1}$	I_C=3A, I_B=6mA	-	0.9	1.5	V
		$V_{CE(sat)2}$	I_C=7A, I_B=14mA	-	1.2	2.0	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=3A, I_B=6mA	-	1.5	2.5	V
Switching Time	Turn-On Time	t_{on}		-	0.8	-	μs
	Storage Time	t_{stg}		-	3.0	-	
	Fall Time	t_f	I_{B1} = −I_{B2} = 6 mA DUTY CYCLE≦1%	-	2.5	-	

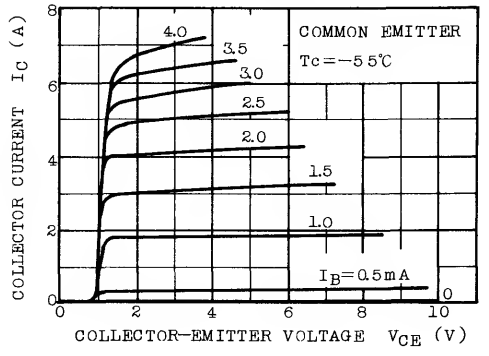
$I_C - V_{CE}$



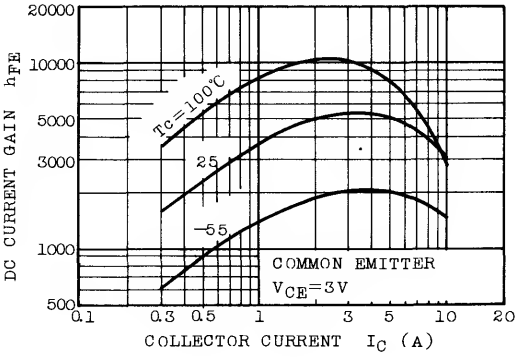
$I_C - V_{CE}$



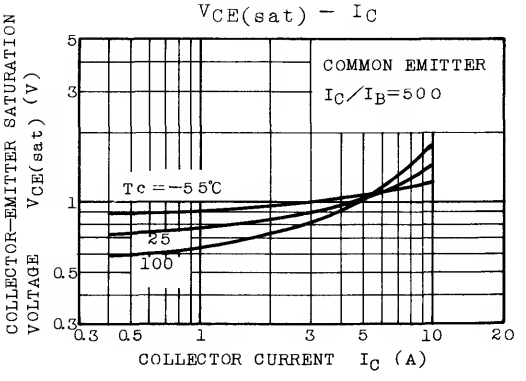
$I_C - V_{CE}$



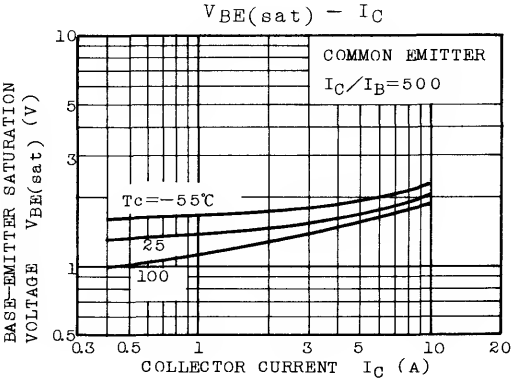
$h_{FE} - I_C$



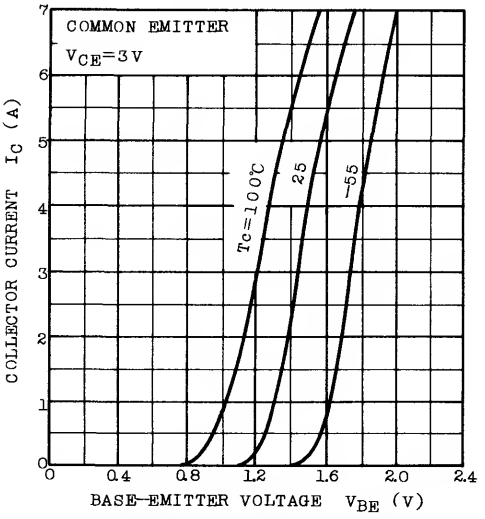
$V_{CE(sat)} - I_C$



$V_{BE(sat)} - I_C$



$I_C - V_{BE}$



SAFE OPERATING AREA