SILICON NPN TRIPLE DIFFUSED MESA TYPE
(DARLINGTON POWER)

2SD1034A

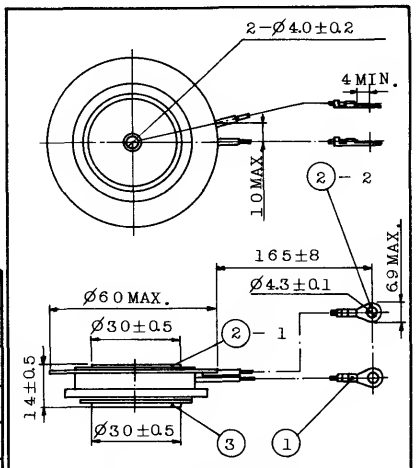
HIGH POWER SWITCHING APPLICATIONS.
DC-AC POWER INVERTER APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

FEATURES:

. High Voltage : $V_{CEO(SUS)}$=450V
. Triple Diffused Design.
. Darlington Design.

INDUSTRIAL APPLICATION

Unit in mm



① BASE (WHITE)
②-1 EMITTER
②-2 EMITTER (RED)
③ COLLECTOR

JEDEC	—
EIAJ	—
TOSHIBA	2-60B1A

Weight : 150g

MAXIMUM RATINGS (Ta=25°C)

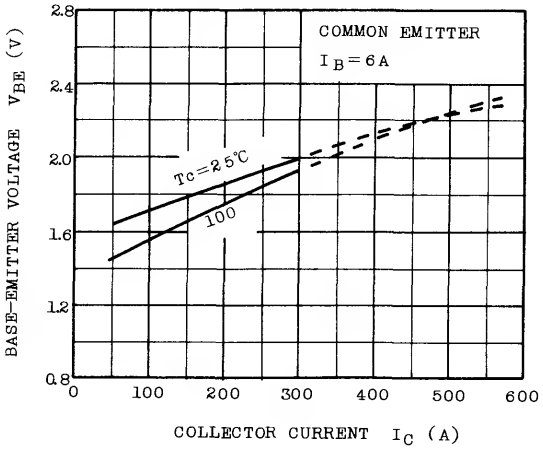
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	600	V
Collector-Emitter Voltage	$V_{CEO(SUS)}$	450	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	300	A
Emitter Current	I_E	-300	A
Base Current	I_B	12	A
Thermal Resistance (Double Side Cooling)	$R_{th(j-c)}$	0.08	°C/W
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	-40～150	°C
Mounting Force Required	F	500±50	kg

ELECTRICAL CHARACTERISTICS (Ta=25°C)

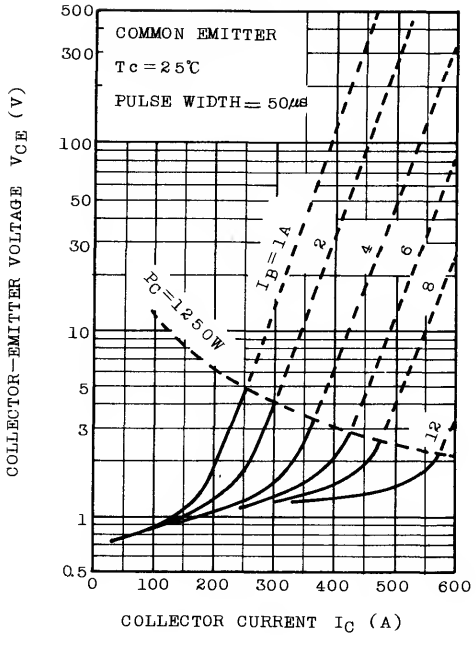
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
DC Current Gain		h_{FE}	V_{CE}=5V, I_C=300A	150	-	-	
			V_{CE}=5V, I_C=150A	-	500	-	
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	I_C=0.5A, L=40mH	450	-	-	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=300A, I_B=6A (Note)	-	-	2.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$		-	-	2.5	V
Collector Cut-off Current		I_{CBO}	V_{CB}=600V, I_E=0	-	-	2	mA
Emitter Cut-off Current		I_{EBO}	V_{EB}=6V, I_C=0	-	-	600	mA
Switching Time	Turn-on Time	t_{on}	I_C=300A, I_{B1}=6A, $-I_{B2}$=16A, V_C=300V	-	1	2	μs
	Storage Time	t_{stg}		-	13	16	
	Fall Time	t_f		-	2.5	4	

Note : Pulse Test; Pulse width≦300μs, Duty Cycle≦3%
Mounting Force; F=500kg

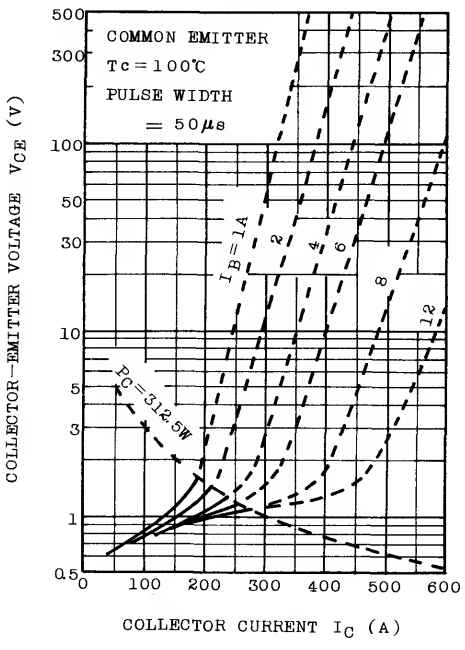
$V_{BE(sat)} - I_C$



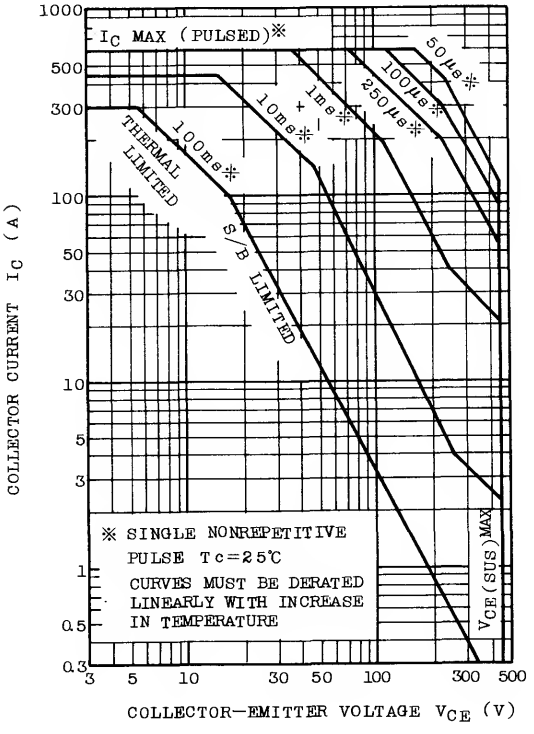
$V_{CE} - I_C$



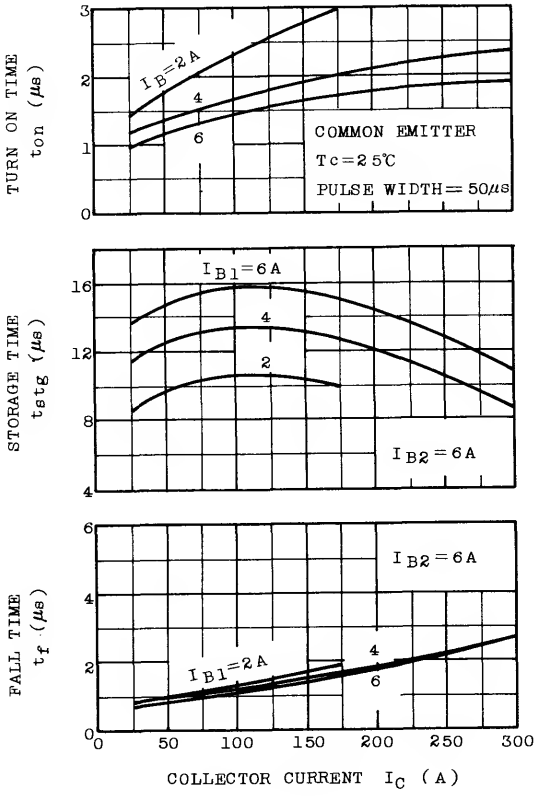
$V_{CE} - I_C$



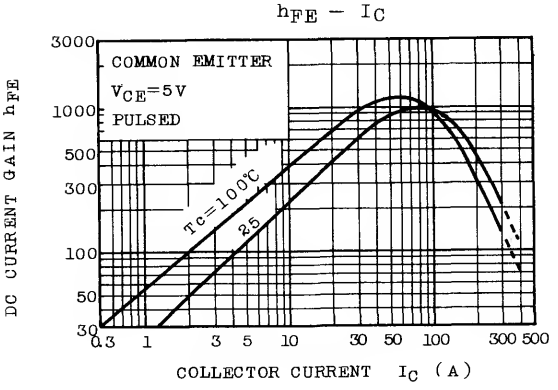
SAFE OPERATING AREA



SWITCHING TIME – I_C



h_{FE} – I_C



TRANSIENT THERMAL IMPEDANCE (JUNCTION - TO)