

2SD548

SILICON NPN TRIPLE DIFFUSED MESA TYPE
(DARLINGTON POWER)

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

FEATURES:

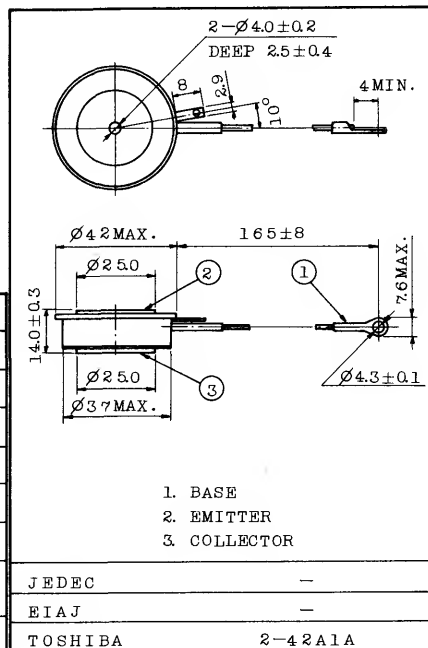
- . High Voltage : $V_{CEO(SUS)}=450V$
- . Triple Diffused Design.
- . Darlington Design

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	600	V
Collector-Emitter Voltage	$V_{CE0(SUS)}$	450	V
Emitter-Base Voltage	V_{EB0}	5	V
Collector Current	I_C	120	A
Emitter Current	I_E	-120	A
Base Current	I_B	8	A
Thermal Resistance (Double Side Cooling)	$R_{th(j-c)}$	0.13	$^\circ C/W$
Junction Temperature	T_j	125	$^\circ C$
Storage Temperature Range	T_{stg}	-40~150	$^\circ C$
Mounting Force Required	F	400 $\pm$ 40	kg

INDUSTRIAL APPLICATIONS

Unit in mm



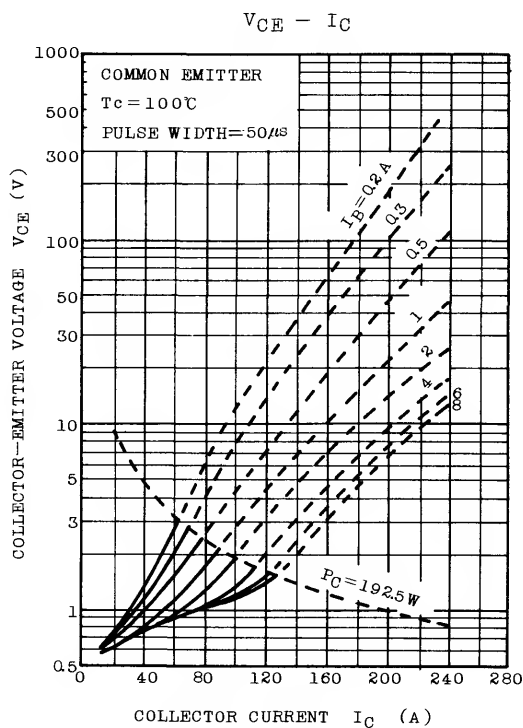
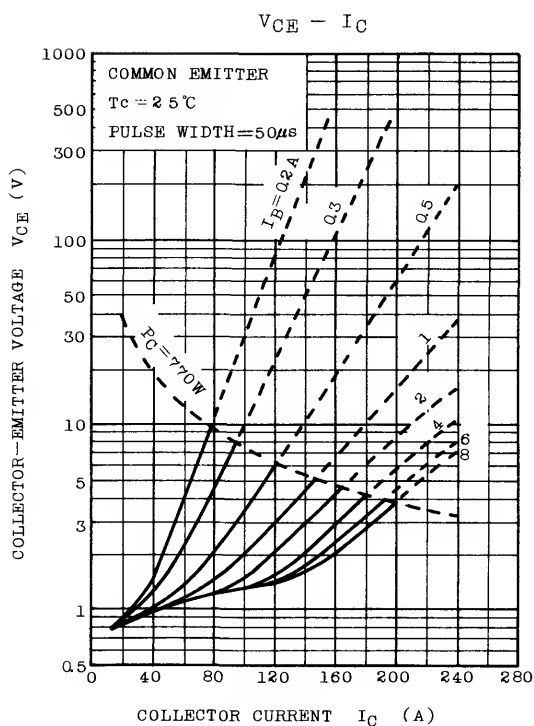
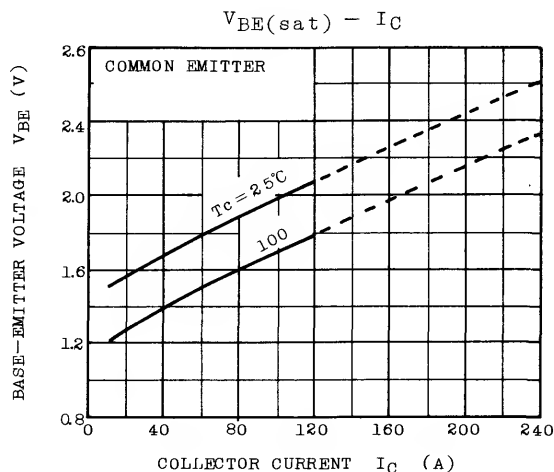
Weight : 70g

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

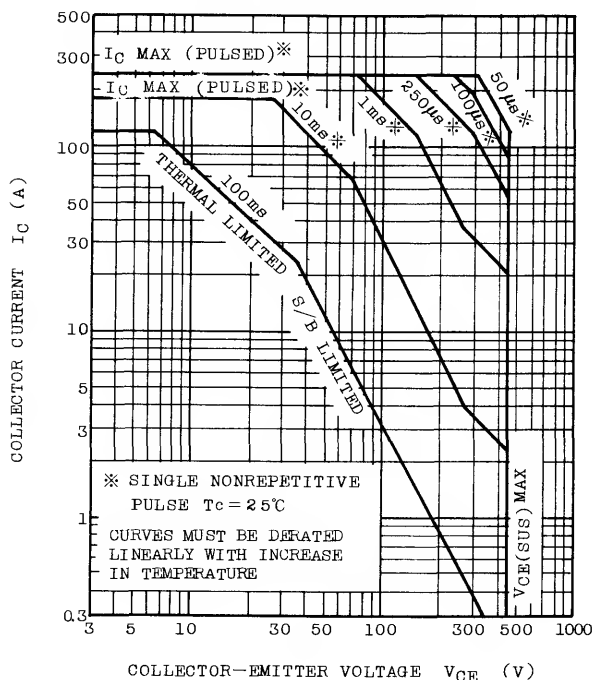
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=120A$	150	—	—	
		$V_{CE}=5V, I_C=60A$	—	500	—	
Collector-Emitter Sustaining Voltage	$V_{CE0(SUS)}$	$I_C=0.5A, L=40mH$	450	—	—	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=120A, I_B=2.4A$ (Note)	—	—	2.0	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		—	—	2.5	V
Collector Cut-off Current	I_{CB0}	$V_{CB}=600V, I_E=0$	—	—	2	mA
Emitter Cut-off Current	I_{EB0}	$V_{EB}=5V, I_C=0$	—	—	150	mA
Switching Time	Turn-on Time	$I_C=120A, I_{B1}=2.4A, -I_{B2}=2.4A, V_C=300V$	—	3	—	μs
	Storage Time		—	12	—	μs
	Fall Time		—	8	—	μs

Note : Pulse Test; Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 3\%$
Mounting Force; $F=400kg$

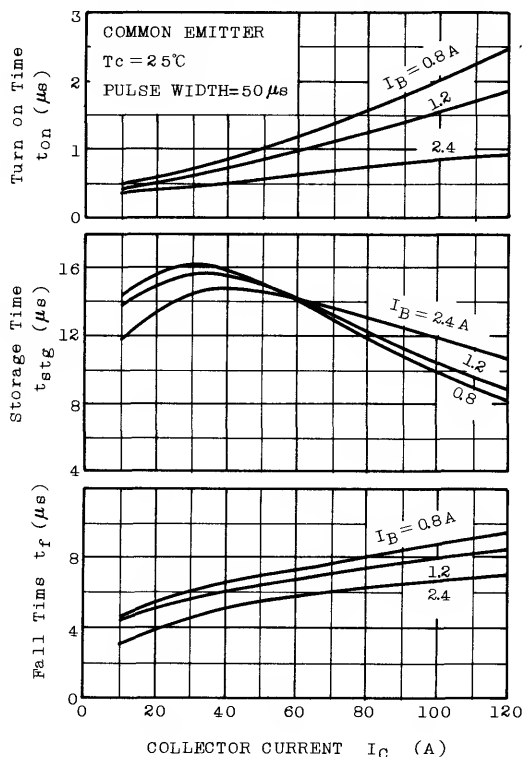
TOSHIBA CORPORATION



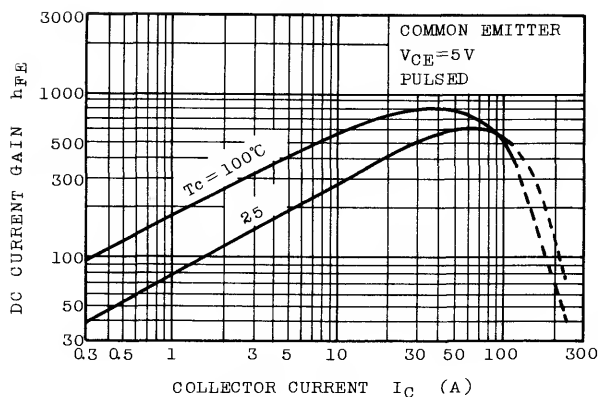
SAFE OPERATING AREA



SWITCHING CHARACTERISTICS



$h_{FE} - I_C$



TRANSIENT THERMAL IMPEDANCE (JUNCTION - CASE)

