

# 2SD700

## SILICON NPN TRIPLE DIFFUSED MESA TYPE (DARLINGTON POWER)

### INDUSTRIAL APPLICATIONS

Unit in mm

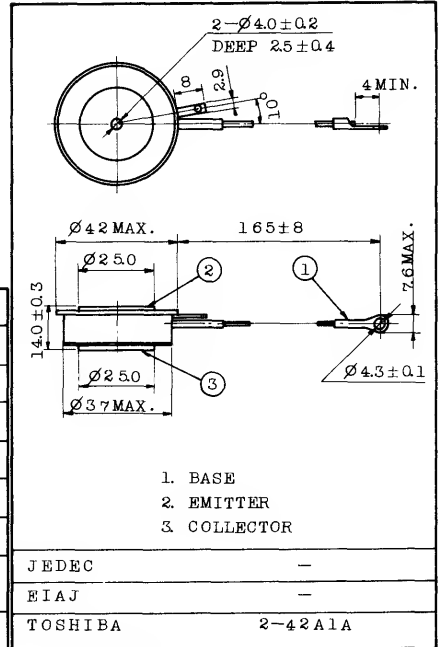
HIGH POWER SWITCHING APPLICATIONS.  
DC-AC POWER INVERTER APPLICATIONS.  
MOTOR CONTROL APPLICATIONS.

#### FEATURES:

- . High Voltage :  $V_{CEO(SUS)}=200V$
- . Triple Diffused Design.
- . Darlington Design.

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Base Voltage	$V_{CBO}$	300	V
Collector Emitter Voltage	$V_{CEO(SUS)}$	200	V
Emitter Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	200	A
Emitter Current	$I_E$	-200	A
Base Current	$I_B$	12	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±40	kg



JEDEC —  
EIAJ —  
TOSHIBA 2-42A1A

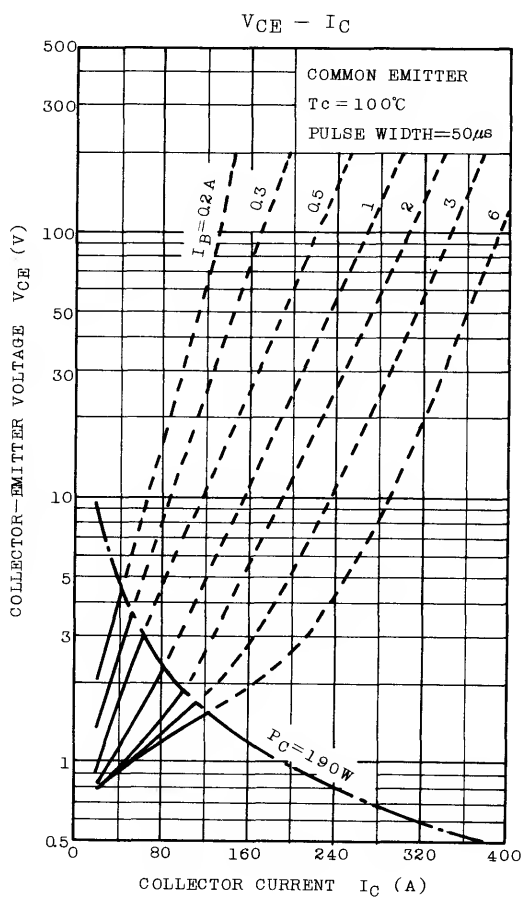
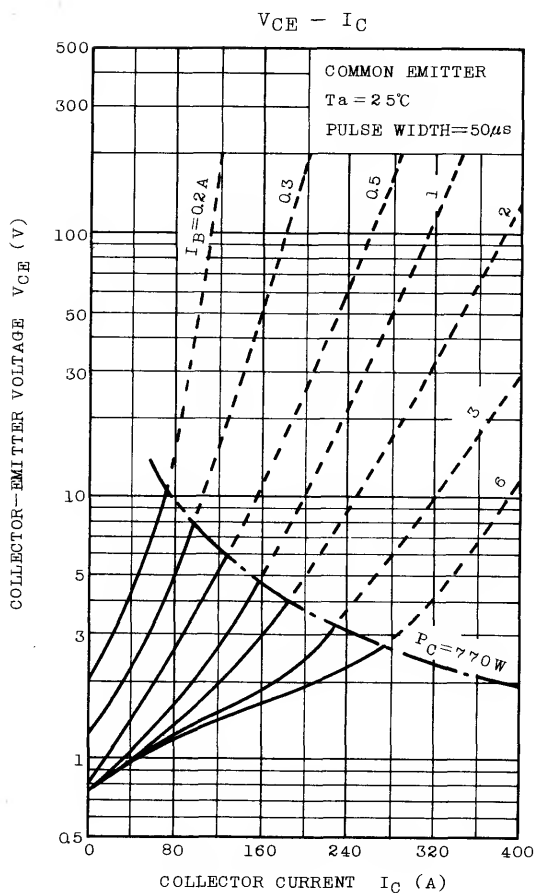
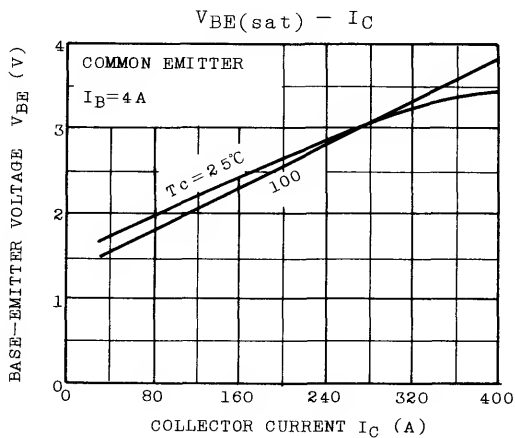
Weight : 70g

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

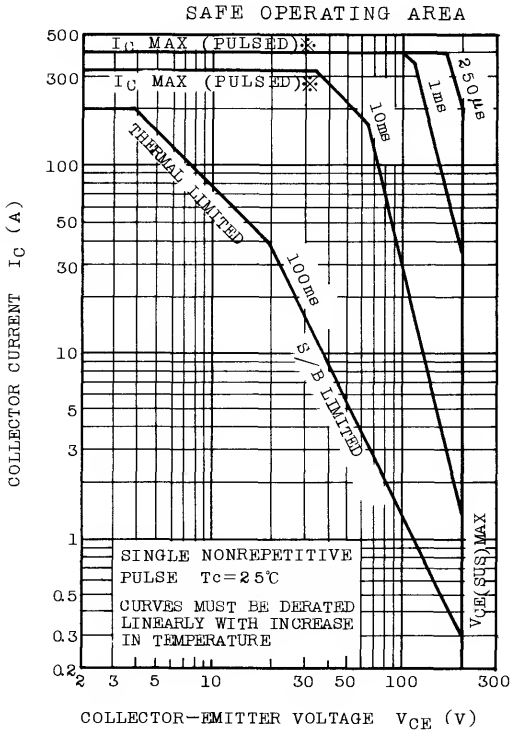
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
DC Current Gain	$h_{FE}$	$V_{CE}=5V, I_C=200A$	150	-	-		
		$V_{CE}=5V, I_C=100A$	-	700	-		
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	$I_C=0.5A, L=40mH$	200	-	-	V	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=200A, I_B=4A$ (Note)	-	-	2.0	V	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-	-	2.5	V	
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=300V, I_E=0$	-	-	1.0	mA	
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$	-	-	200	mA	
Switching Time	Turn-on Time	$t_{on}$	$I_C=200A, I_{B1}=4A, -I_{B2}=4A, V_C=100V$	-	1.0	-	$\mu s$
	Storage Time	$t_{stg}$		-	4.5	-	$\mu s$
	Fall Time	$t_f$		-	8.0	-	$\mu s$

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

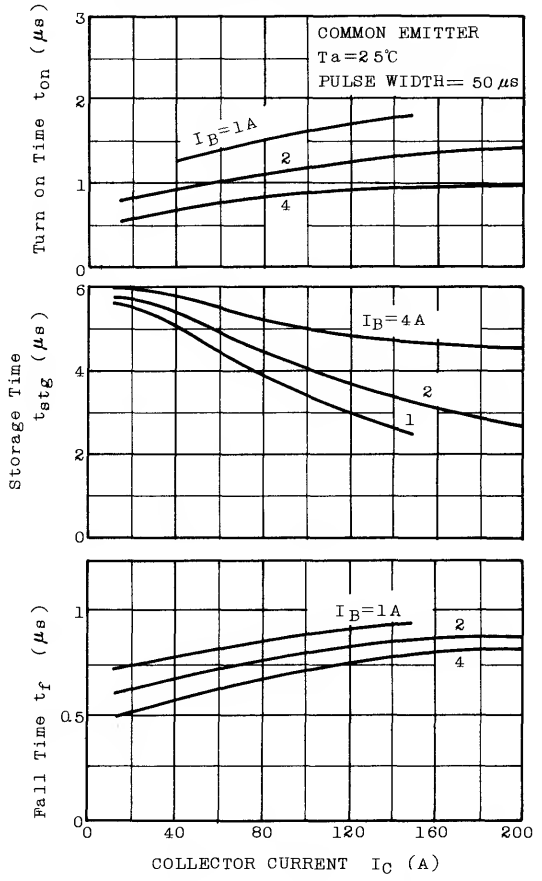
TOSHIBA CORPORATION



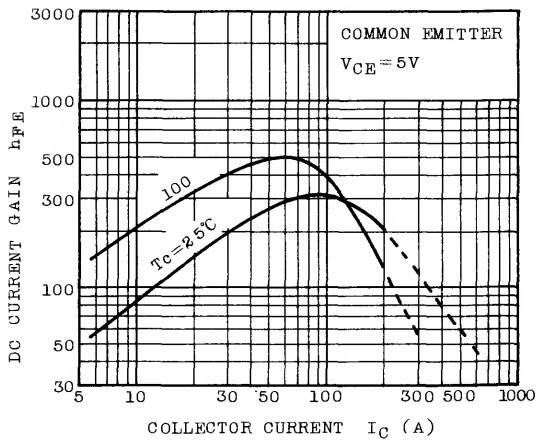
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## SWITCHING CHARACTERISTICS



## $h_{FE} - I_C$



## TRANSIENT THERMAL IMPEDANCE (JUNCTION - CASE)

