2SD700

SILICON NPN TRIPLE DIFFUSED MESA TYPE (DARLINGTON POWER)

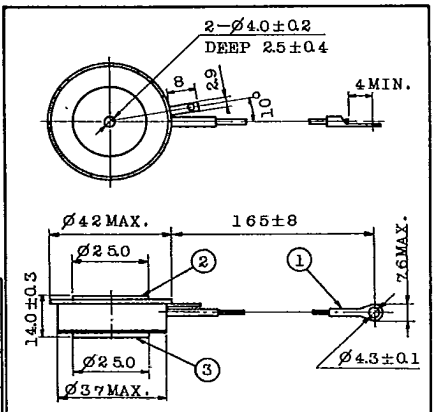
INDUSTRIAL APPLICATIONS

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

FEATURES:

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

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-42A1A

Weight : 70g

MAXIMUM RATINGS (Ta=25°C)

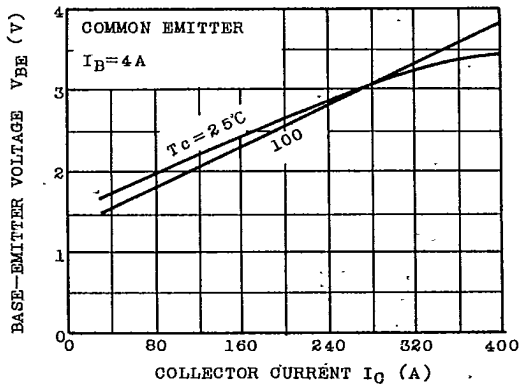
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Base Voltage	V_{CBO}	300	V
Collector Emitter Voltage	$V_{CEO(SUS)}$	200	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	200	A
Emitter Current	I_E	-200	A
Base Current	I_B	12	A
Thermal Resistance (Double Side Cooling)	$R_{th(j-c)}$	0.13	°C/W
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	-40~150	°C
Mounting Force Required	F	400±40	kg

ELECTRICAL CHARACTERISTICS (Ta=25°C)

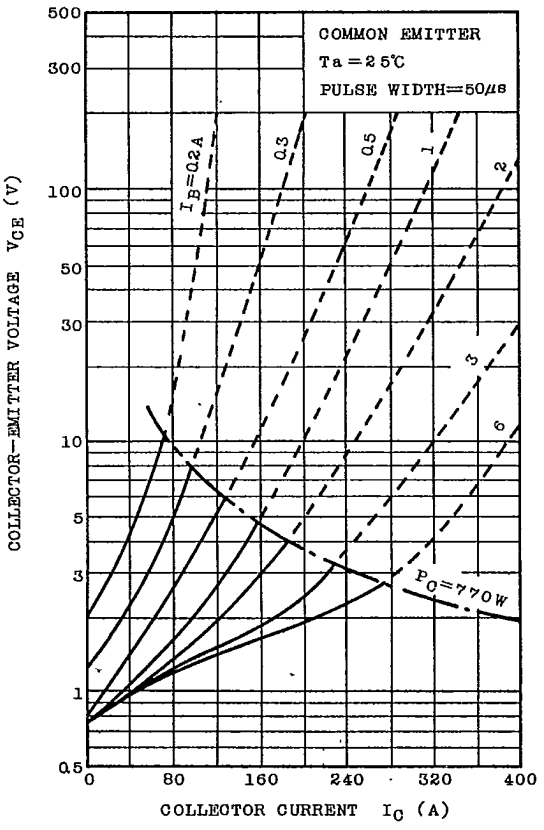
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
DC Current Gain		h_{FE}	V_{CE}=5V, I_C=200A	150	-	-	
			V_{CE}=5V, I_C=100A	-	700	-	
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	I_C=0.5A, L=40mH	200	-	-	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=200A, I_B=4A (Note)	-	-	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	-	μs
	Storage Time	t_{stg}		-	4.5	-	μs
	Fall Time	t_f		-	8.0	-	μs

Note : Pulse Test; Pulse Width≦300μs , Duty Cycle≦3%
Mounting Force; F=400kg

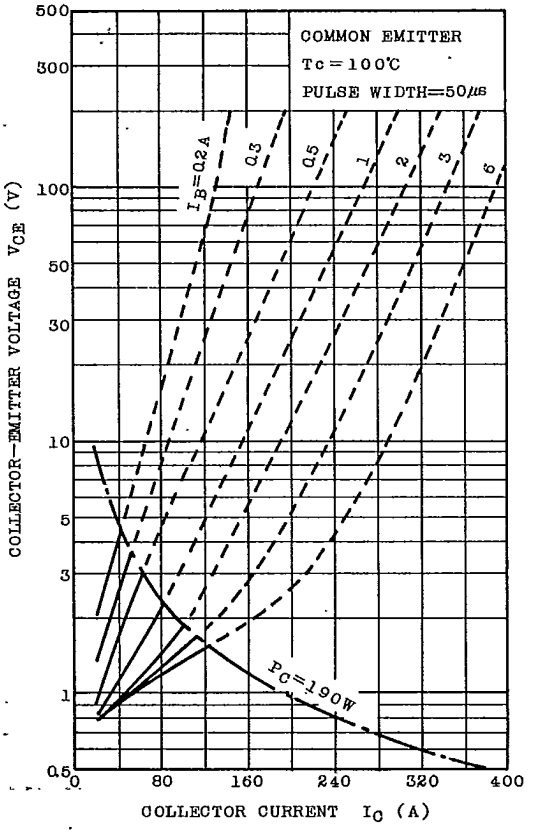
$V_{BE(sat)} - I_C$



$V_{CE} - I_C$



$V_{CE} - I_C$



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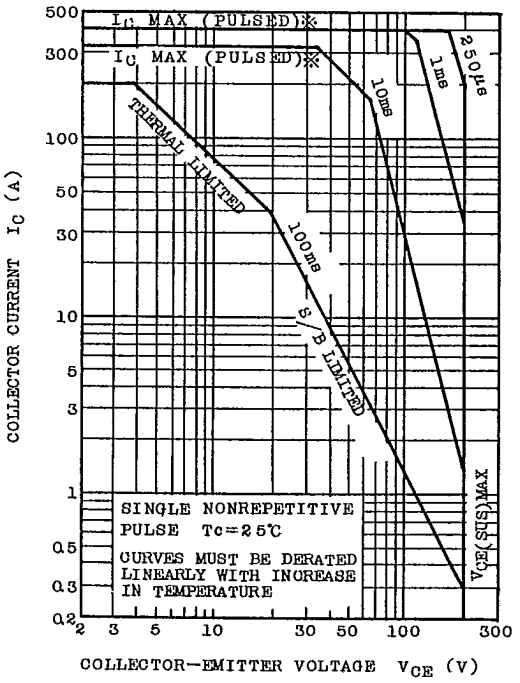
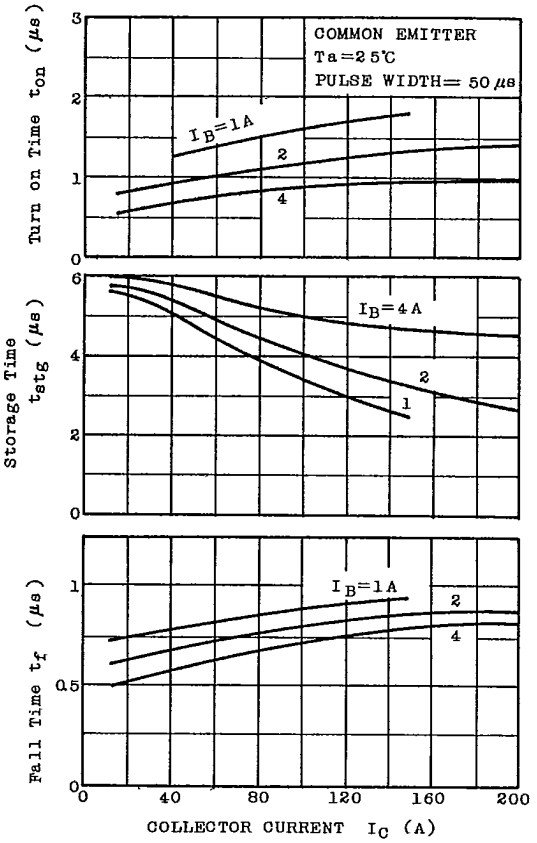
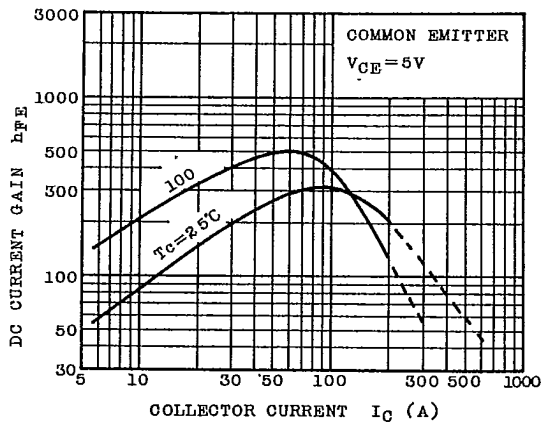
SAFE OPERATING AREA



SWITCHING CHARACTERISTICS



h_{FE} — I_C



TRANSIENT THERMAL IMPEDANCE (JUNCTION — CASE)