

## INDUSTRIAL APPLICATIONS

Unit in mm

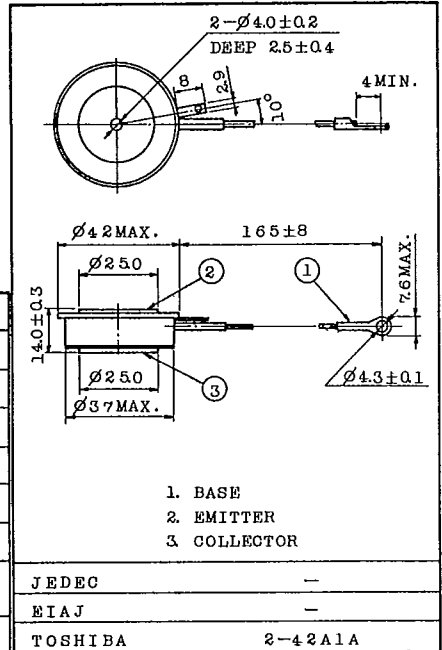
HIGH POWER SWITCHING APPLICATIONS.  
DC-AC POWER INVERTER APPLICATIONS.  
MOTOR CONTROL APPLICATIONS.

### FEATURES:

- . High Voltage :  $V_{CE0(SUS)}=450V$
- . Triple Diffused Design.
- . Darlington Design

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	600	V
Collector-Emitter Voltage	$V_{CE0(SUS)}$	450	V
Emitter-Base Voltage	$V_{EBO}$	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

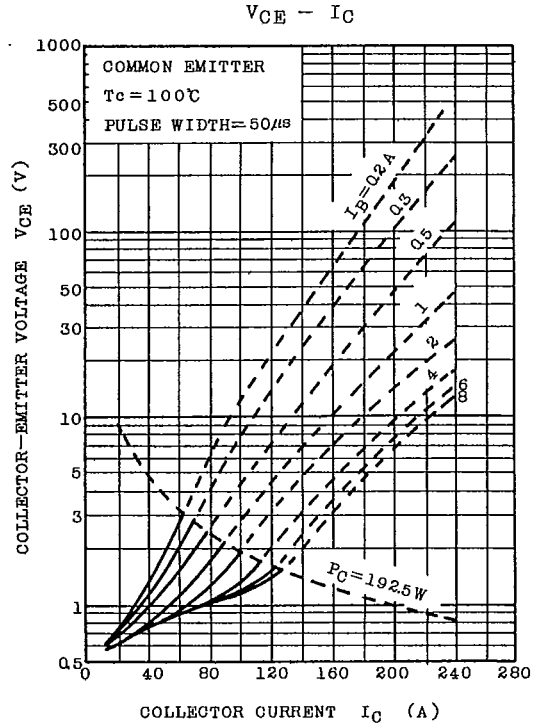
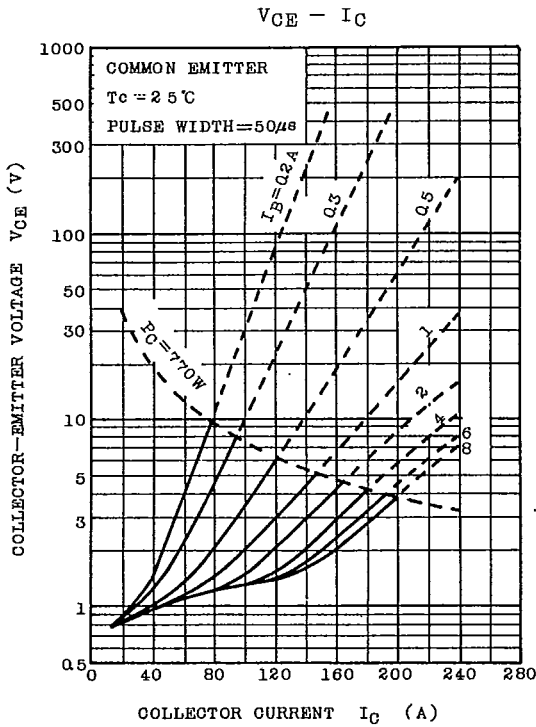
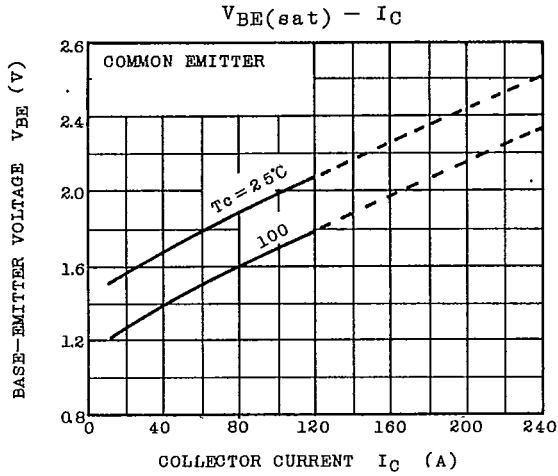


Weight : 70g

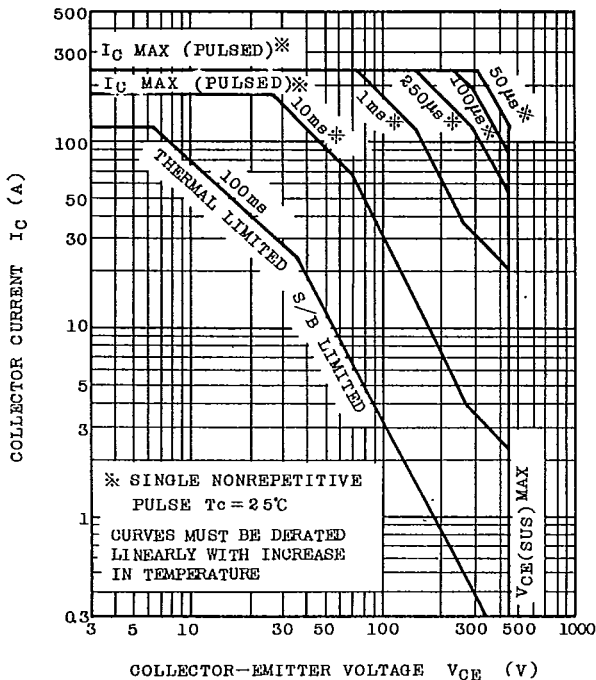
### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )

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		$I_{CBO}$	$V_{CB}=600V, I_E=0$	-	-	2	mA
Emitter Cut-off Current		$I_{EBO}$	$V_{EB}=5V, I_C=0$	-	-	150	mA
Switching Time	Turn-on Time	$t_{on}$	$I_C=120A, I_{B1}=2.4A, -I_{B2}=2.4A, V_C=300V$	-	3	-	$\mu s$
	Storage Time	$t_{stg}$		-	12	-	$\mu s$
	Fall Time	$t_f$		-	8	-	$\mu s$

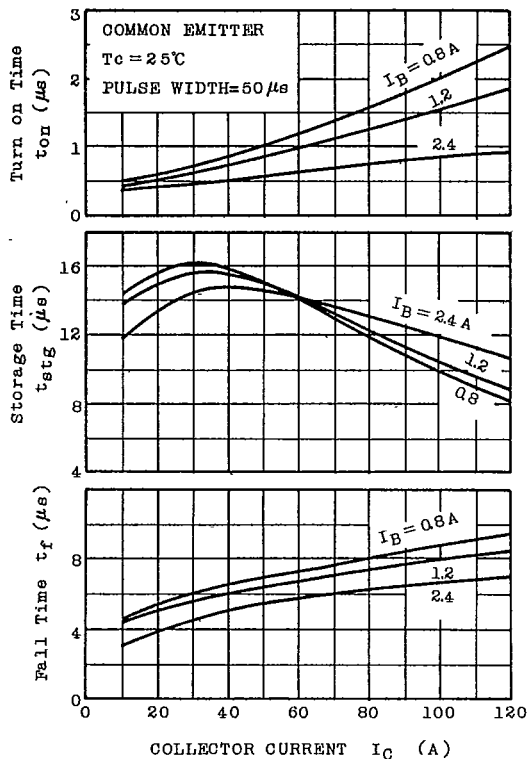
Note : Pulse Test; Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 3\%$   
Mounting Force;  $F=400kg$



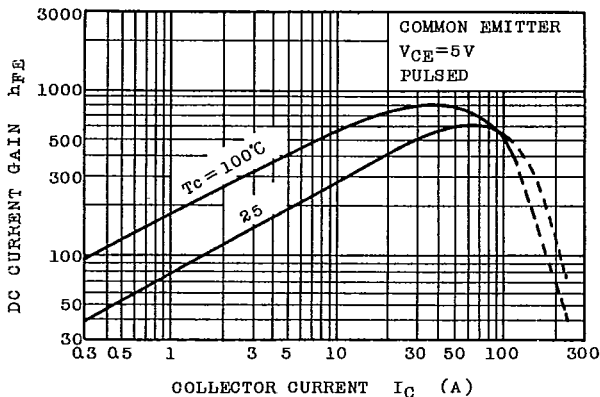
### SAFE OPERATING AREA



### SWITCHING CHARACTERISTICS



### $h_{FE} - I_C$



### TRANSIENT THERMAL IMPEDANCE (JUNCTION - CASE)

