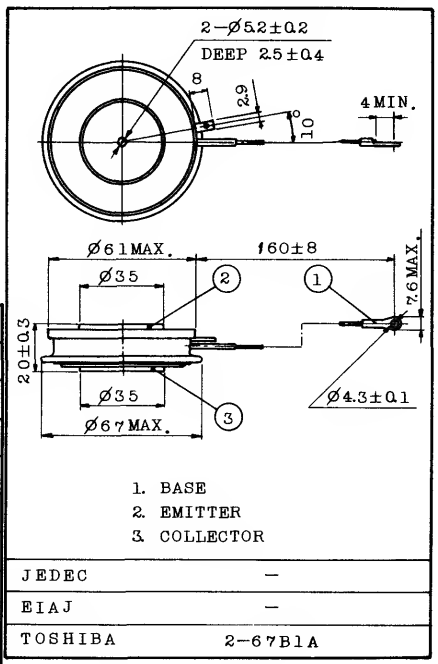
2SD1166

SILICON NPN TRIPLE DIFFUSED MESA TYPE
(DARLINGTON POWER)

HIGH POWER SWITCHING APPLICATION
AC & DC MOTOR CONTROL APPLICATION
INVERTER APPLICATION

FEATURES:
. High Voltage : $V_{CEO(SUS)} > 900V$
. Triple Diffused Design
. Darlington Design

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-67B1A

Weight : 250g

MAXIMUM RATINGS (Ta=25°C)

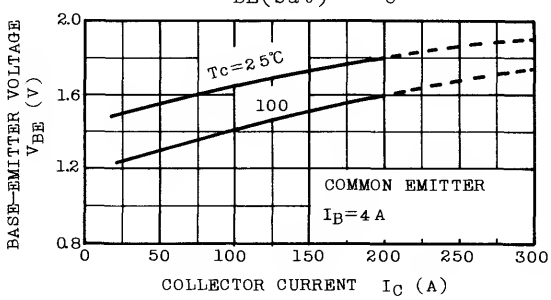
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	1000	V
Collector-Emitter Voltage	$V_{CEO(SUS)}$	900	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	200	A
Emitter Current	I_E	-200	A
Base Current	I_B	12	A
Thermal Resistance (Double Side Cooling)	$R_{th(j-c)}$	0.04	°C/W
Junction Temperature	T_j	125	°C
Storage Temperature	T_{stg}	-40 ~ 150	°C
Mounting Force Required	F	1000±100	kg

ELECTRICAL CHARACTERISTICS (Ta=25°C)

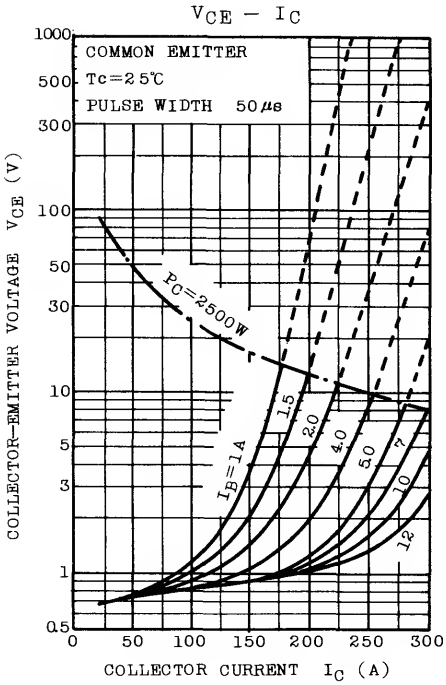
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Current Transfer Ratio		h_{FE}	V_{CE}=5V, I_C=200A	80	200	-	
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	I_C=0.5A, L=40mH	900	-	-	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=200A, I_B=5A (Note)	-	-	2.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$		-	-	2.5	V
Collector Cut-off Current		I_{CEO}	V_{CE}=900V, I_B=0	-	1.0	3.0	mA
Emitter Cut-off Current		I_{EBO}	V_{EB}=6V, I_C=0	-	300	2000	mA
Switching Time	Turn-on Time	t_{on}	I_C=200A, I_{B1}=4A, $-I_{B2}$=8A, V_C=600V	-	1.8	3.0	μs
	Storage Time	t_{stg}		-	24	30	μs
	Fall Time	t_f		-	4.0	8.0	μs

Note: Pulse Test; Pulse Width ≦ 300μs Duty Cycle ≦ 3%
Mounting Foce; F=1000kg

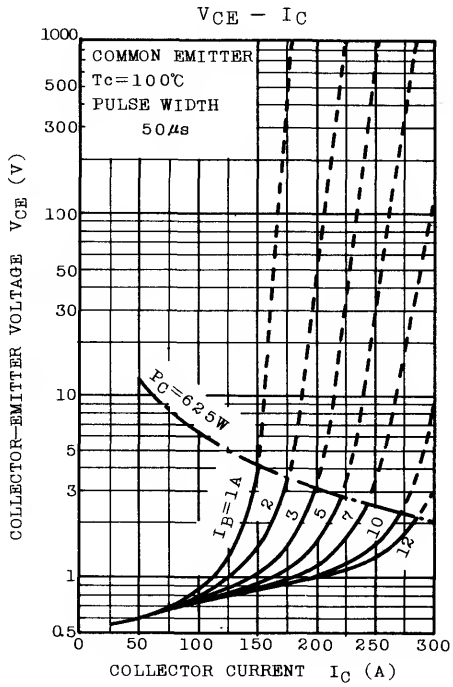
$V_{BE(sat)} - I_C$



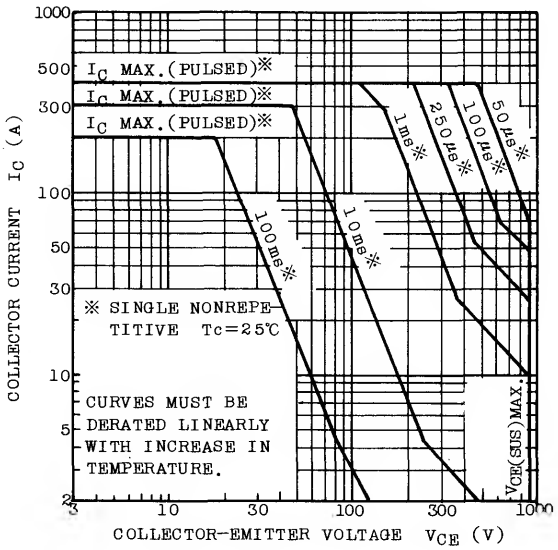
$V_{CE} - I_C$



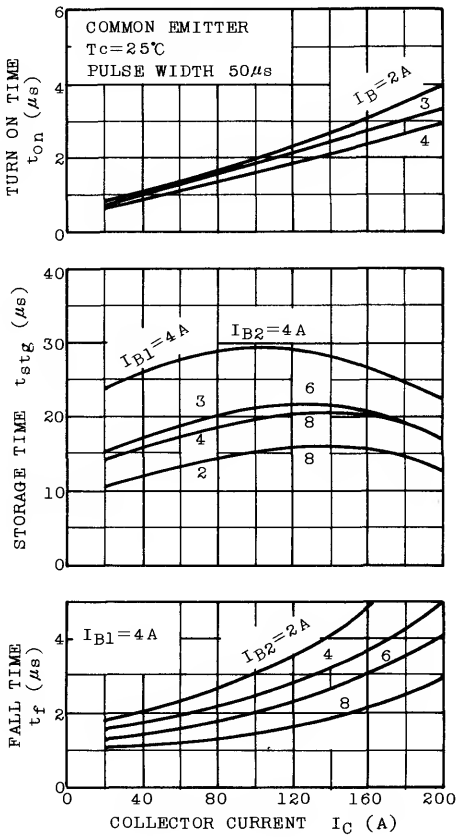
$V_{CE} - I_C$



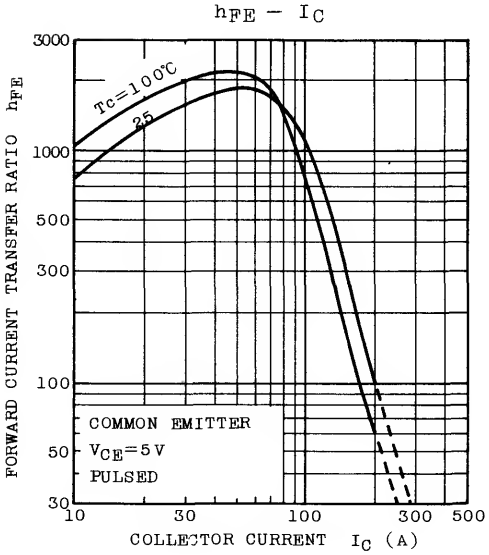
SAFE OPERATING AREA



SWITCHING TIME — I_C



h_{FE} — I_C



TRANSIENT THERMAL IMPEDANCE (JUNCTION TO CASE)