

# 2SD1165A

SILICON NPN TRIPLE DIFFUSED MESA TYPE

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

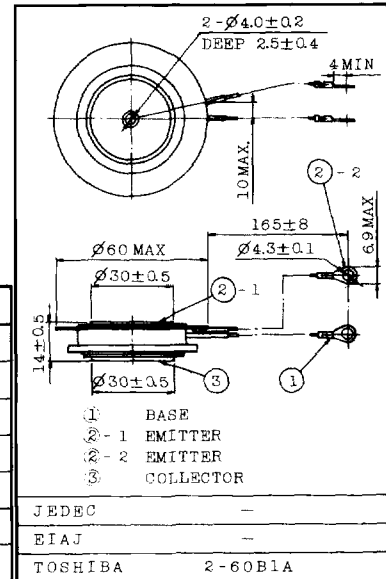
**FEATURES:**

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

**MAXIMUM RATINGS (Ta=25°C)**

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	1000	V
Collector-Emitter Voltage	V <sub>CE(SUS)</sub>	900	V
Emitter-Base Voltage	V <sub>EB0</sub>	6	V
Collector Current	I <sub>C</sub>	100	A
Emitter Current	I <sub>E</sub>	-100	A
Base Current	I <sub>B</sub>	12	A
Thermal Resistance (Double Side Cooling)	R <sub>th(j-c)</sub>	0.08	°C/W
Junction Temperature	T <sub>j</sub>	125	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ 150	°C
Mounting Force Required	F	500±50	kg

**INDUSTRIAL APPLICATIONS**  
Unit in mm



Weight : 150g

**ELECTRICAL CHARACTERISTICS (Ta=25°C)**

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Current Transfer Ratio	h <sub>FE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =100A	60	-	-	
		V <sub>CE</sub> =5V, I <sub>C</sub> =50A	-	500	-	
Collector-Emitter Sustaining Voltage	V <sub>CEO(SUS)</sub>	I <sub>C</sub> =0.5A, L=40mH	900	-	-	V
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100A, I <sub>B</sub> =3A (Note)	-	-	2.0	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>		-	-	2.5	V
Collector Cut-off Current	I <sub>CB0</sub>	V <sub>CB</sub> =1000V, I <sub>E</sub> =0	-	-	2	mA
Emitter Cut-off Current	I <sub>EB0</sub>	V <sub>EB</sub> =6V, I <sub>C</sub> =0	-	-	1000	mA
Switching Time	Turn-on Time	t <sub>on</sub>	-	1.0	2.0	μs
	Storage Time	t <sub>stg</sub>	-	20	25	
	Fall Time	t <sub>f</sub>	-	3.0	5.0	

Note : Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 3%  
Mounting Force; F=500kg

