

2SD647A 2SD697A

SILICON NPN TRIPLE DIFFUSED MESA TYPE
(DARLINGTON POWER)

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

FEATURES:

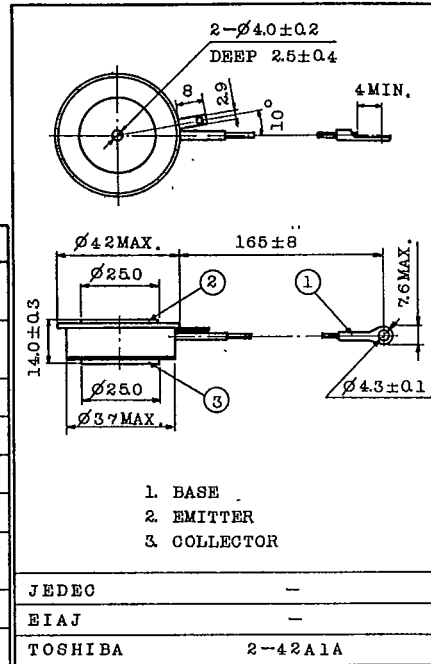
- High Voltage : $V_{CEO(SUS)} \geq 450V$ (2SD697A)
- Triple Diffused Design.
- Darlington Design.

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

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|--|----------------|-----------|--------------|
| Collector-Base Voltage | VCBO | 800 | V |
| | | 500 | |
| Collector-Emitter Voltage | $V_{CEO(SUS)}$ | 600 | V |
| | | 450 | |
| Emitter-Base Voltage | VEBO | 5 | V |
| Collector Current | I_C | 100 | A |
| Emitter Current | I_E | -100 | A |
| Base Current | I_B | 6 | 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 |

INDUSTRIAL APPLICATIONS

Unit in mm



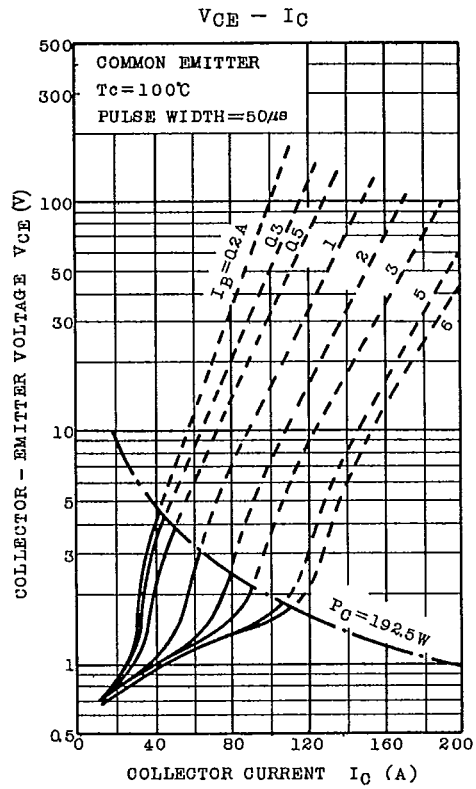
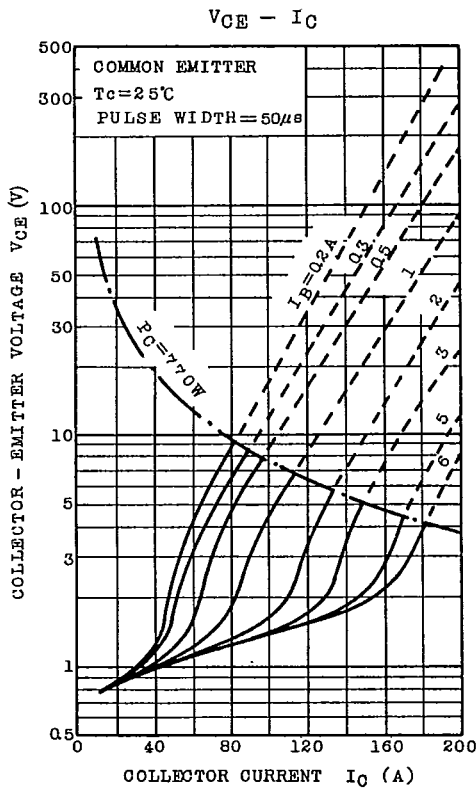
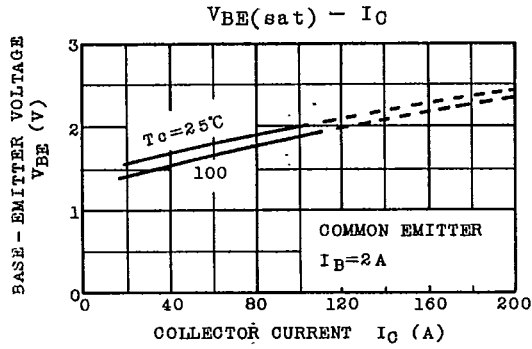
Weight : 70g

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

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|----------------|--|------|------|------|---------|
| DC Current Gain | h_{FE} | $V_{CE}=5V, I_C=100A$ | 100 | - | - | |
| | | $V_{CE}=5V, I_C=50A$ | - | 500 | - | |
| Collector-Emitter Sustaining Voltage | $V_{CEO(SUS)}$ | $I_C=0.5A, L=40mH$ | 600 | - | - | V |
| | | | 450 | | | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=100A, I_B=2A$ (Note) | - | - | 2.0 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | | - | - | 2.5 | V |
| Collector Cut-off Current | I_{CBO} | $V_{CB}=800V, I_E=0$ | - | - | 2 | mA |
| | | $V_{CB}=500V, I_E=0$ | - | - | 2 | |
| Emitter Cut-off Current | I_{EBO} | $V_{EB}=5V, I_C=0$ | - | - | 200 | mA |
| Switching Time | Turn-on Time | $I_C=100A, I_{B1}=2A, I_{B2}=2A, V_C=300V$ | - | 2.5 | - | μs |
| | Storage Time | | - | 20 | - | μs |
| | Fall Time | | - | 4 | - | μs |

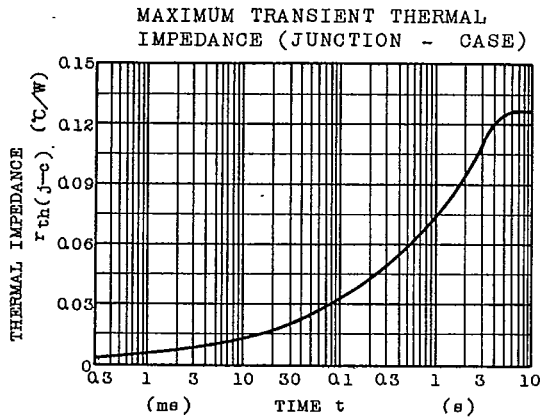
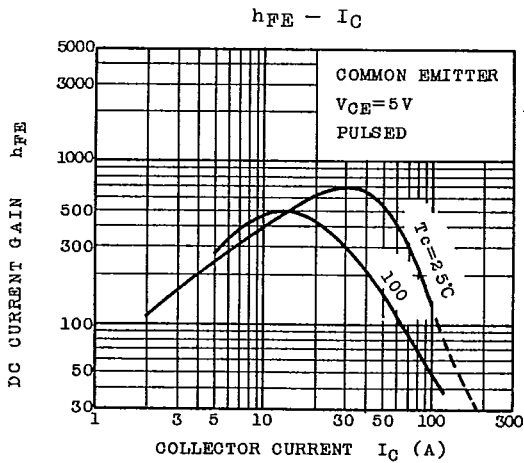
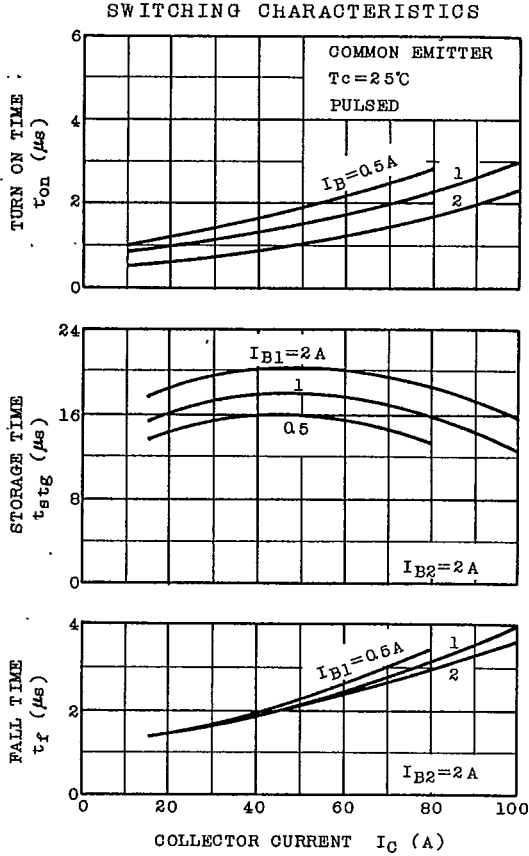
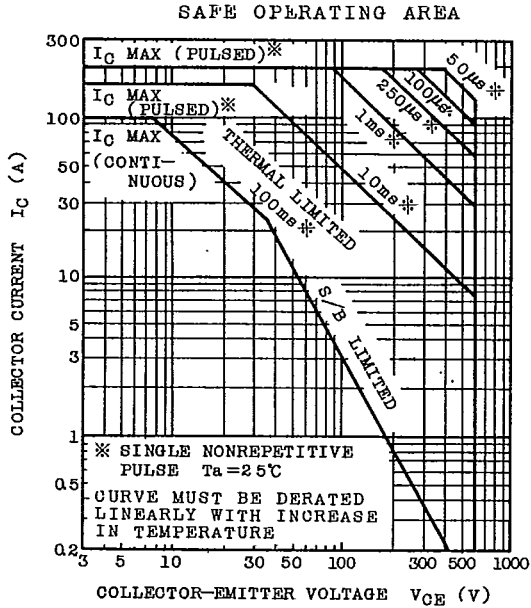
Note : Pulse Test; Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 3\%$
Mounting Force; F=400kg

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