

2SD842

SILICON NPN TRIPLE DIFFUSED TYPE
(DARLINGTON POWER)

HIGH CURRENT SWITCHING APPLICATIONS.

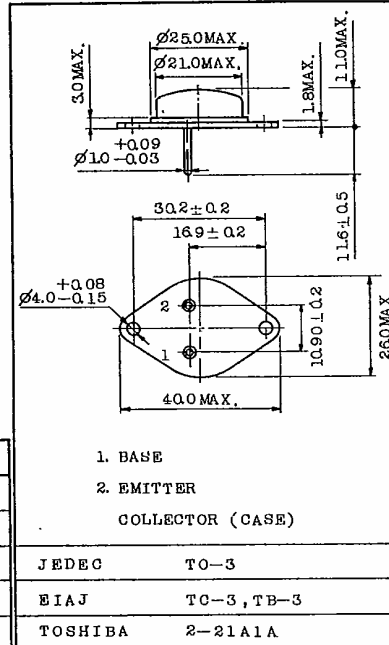
FEATURES:

- . High Collector Current : $I_C = 30A$
- . High DC Current Gain
: $h_{FE}=1000$ (Min.), ($V_{CE}=5V, I_C=20A$)
- . Monolithic Construction with Built-In Base-Emitter Shunt Resistor.

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

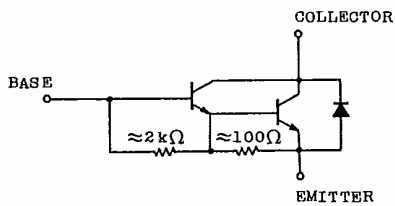
| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|--|-----------|-----------|------------|
| Collector-Base Voltage | V_{CBO} | 80 | V |
| Collector-Emitter Voltage | V_{CEO} | 80 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Current | I_C | 30 | A |
| Base Current | I_B | 1 | A |
| Collector Power Dissipation ($T_c=25^\circ C$) | P_C | 150 | W |
| Junction Temperature | T_j | 150 | $^\circ C$ |
| Storage Temperature Range | T_{stg} | -65 ~ 150 | $^\circ C$ |

Unit in mm



Mounting kit No. AC73
Weight : 12.9g

EQUIVALENT CIRCUIT

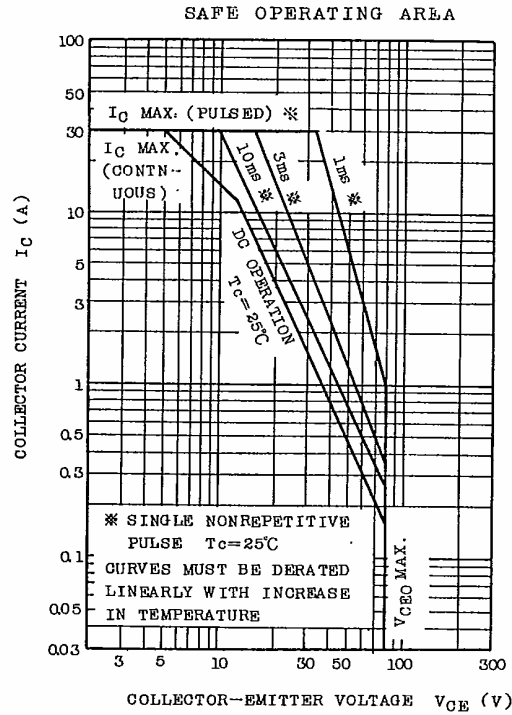
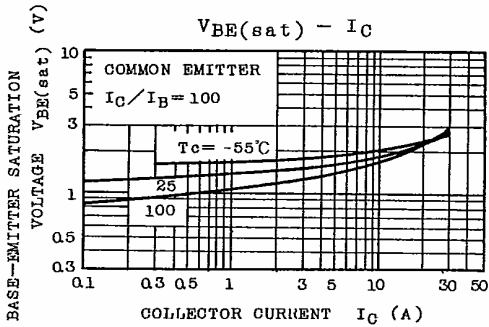
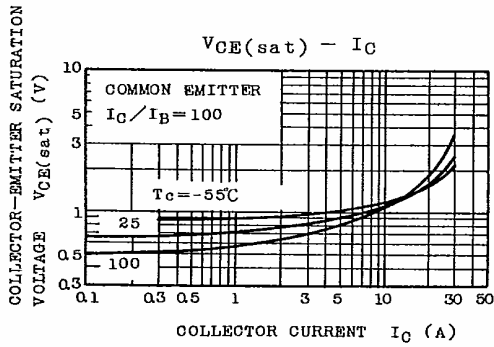
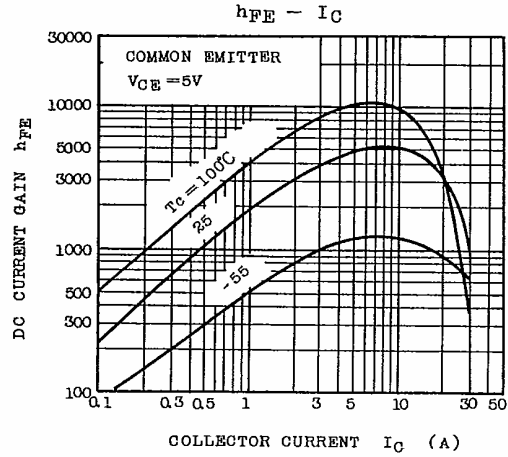
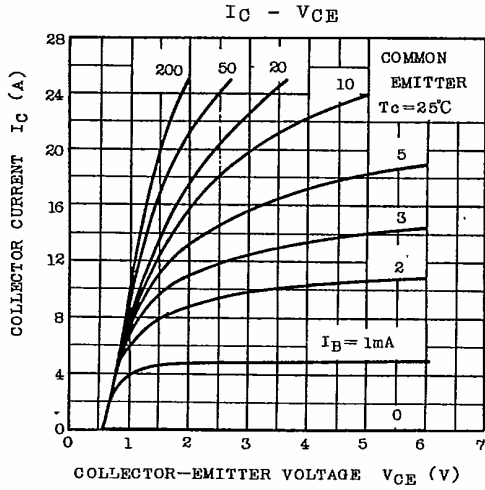


TOSHIBA CORPORATION

ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|--------------|----------------------|--|------|------|------|------|
| Collector Cut-off Current | | ICBO | V _{CB} =80V, I _E =0 | - | - | 100 | μA |
| Emitter Cut-off Current | | I _{EBO} | V _{EB} =5V, I _C =0 | - | - | 10 | mA |
| Collector-Emitter Breakdown Voltage | | V(BR)CEO | I _C =50mA, I _B =0 | 80 | - | - | V |
| DC Current Gain | | h _{FE} (1) | V _{CE} =5V, I _C =20A | 1000 | - | - | |
| | | h _{FE} (2) | V _{CE} =5V, I _C =30A | 200 | - | - | |
| Collector-Emitter Saturation Voltage | | V _{CE(sat)} | I _C =20A, I _B =0.2A | - | - | 3 | V |
| Base-Emitter Saturation Voltage | | V _{BE(sat)} | | - | - | 3.5 | V |
| Emitter-Collector Forward Voltage | | V _{ECF} | I _E =10A, I _B =0 | - | - | 3 | V |
| Transition Frequency | | f _T | V _{CE} =5V, I _C =1A | - | 14 | - | MHz |
| Collector Output Capacitance | | C _{ob} | V _{CB} =10V, I _E =0, f=1MHz | - | 280 | - | pF |
| Switching Time | Turn-on Time | t _{on} | <p>V_{CC}=50V R=10Ω IB1 = -IB2 = 0.01A DUTY CYCLE ≤ 1%</p> | - | 0.7 | - | μs |
| | Storage Time | t _{stg} | | - | 8 | - | |
| | Fall Time | t _f | | - | 2.5 | - | |

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