

TOSHIBA POWER TRANSISTOR MODULE SILICON NPN TRIPLE DIFFUSED TYPE

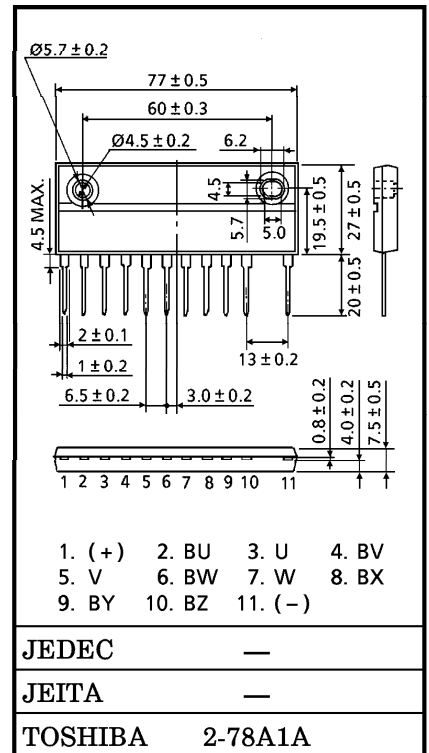
MP6501A

HIGH POWER SWITCHING APPLICATIONS

MOTOR CONTROL APPLICATIONS

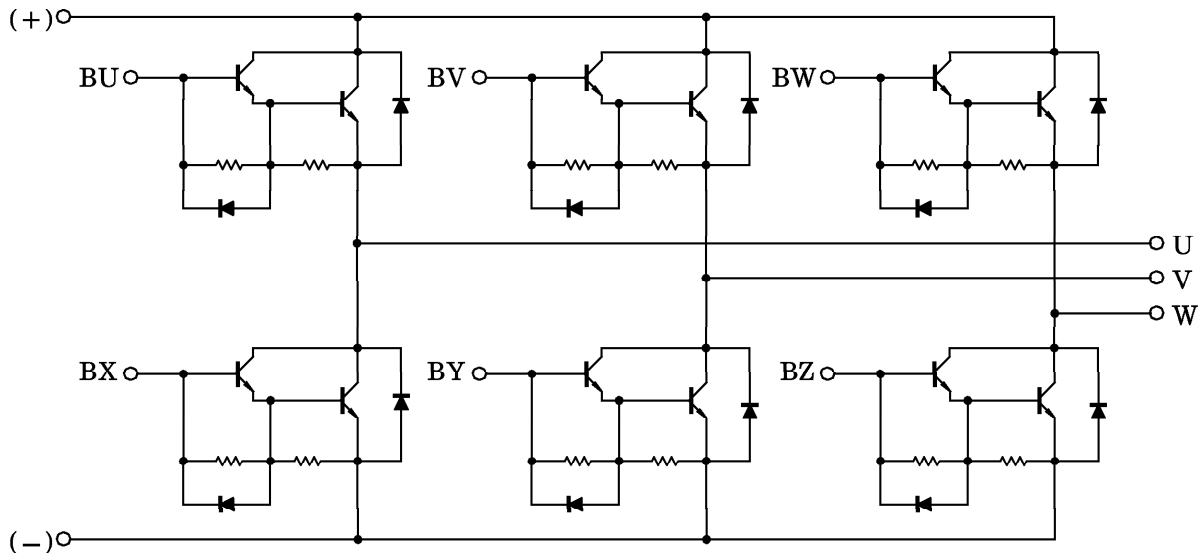
- The Electrodes are is Isolated from Case.
- 6 Darlington Transistor Built Into in 1 Package
- High Input Impendance
- High DC Current Gain
: $h_{FE} = 100$ (Min.) ($I_C = 15A$)
- Low Saturation Voltage
: $V_{CE(sat)} = 2.1V$ (Max.) ($I_C = 15A$)

Unit in mm



Weight : 44g

EQUIVALENT CIRCUIT

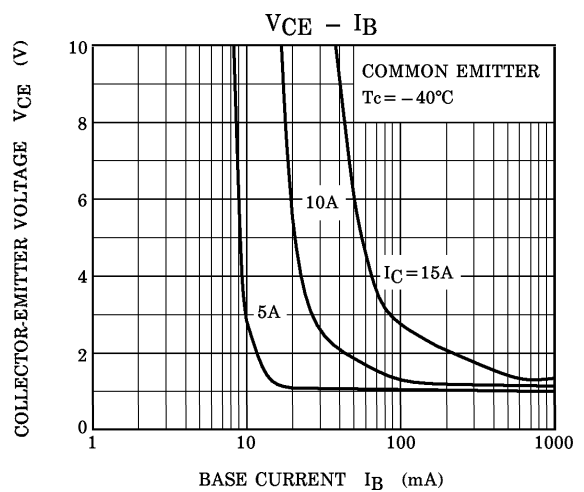
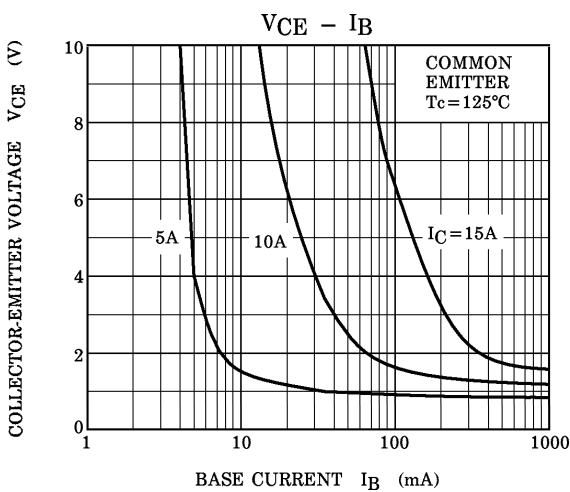
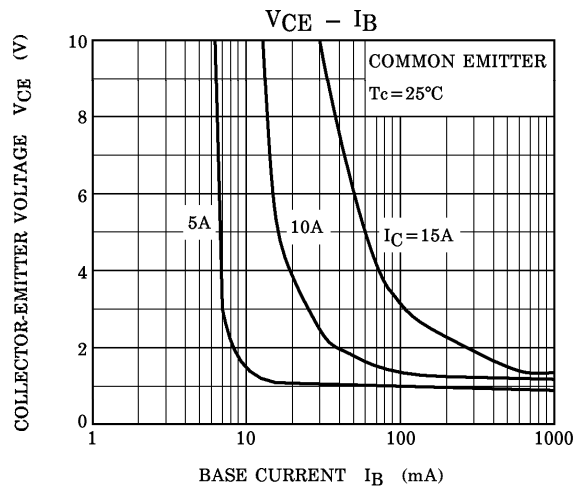
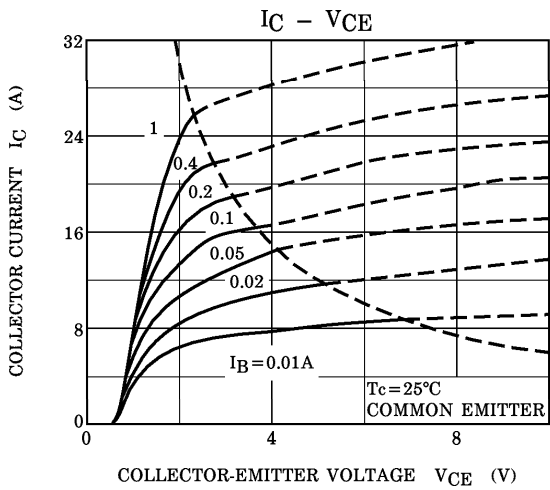
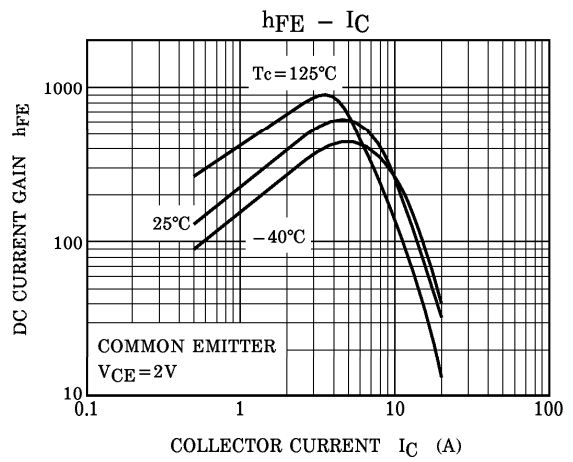
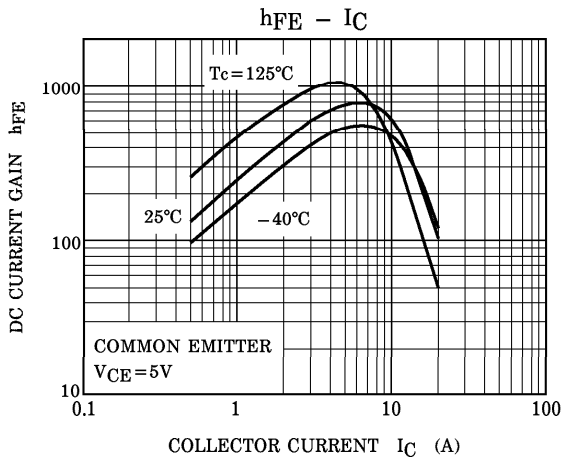


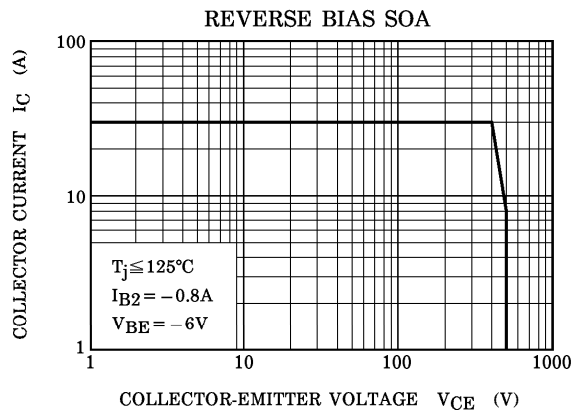
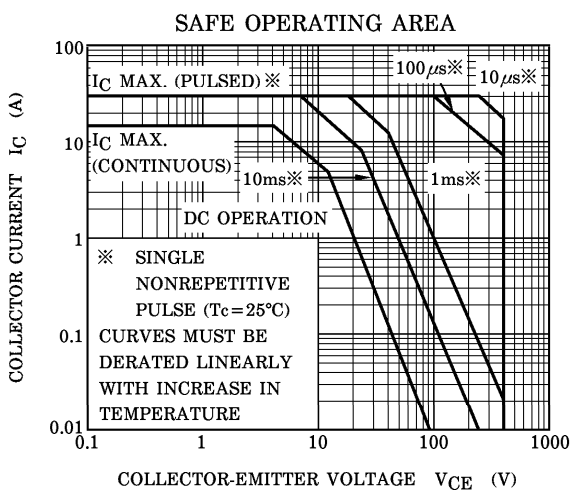
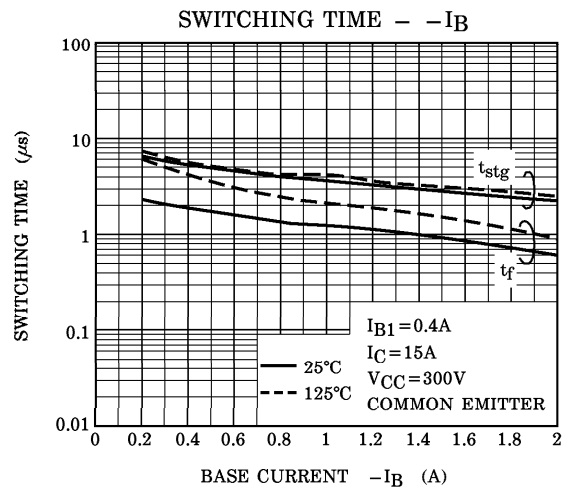
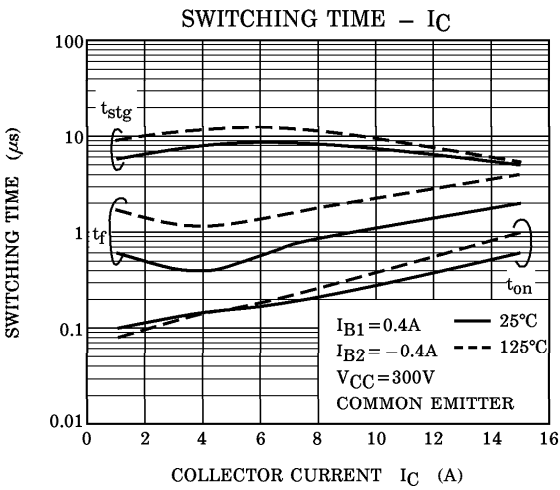
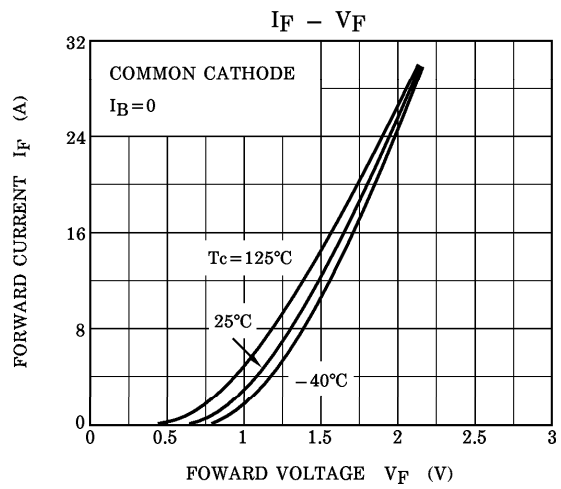
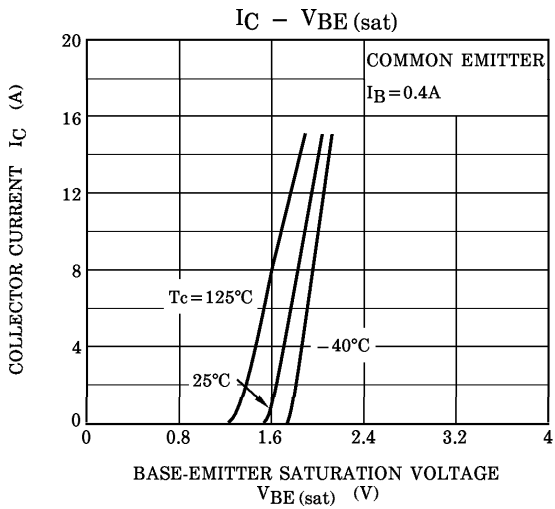
MAXIMUM RATINGS (Ta = 25°C)

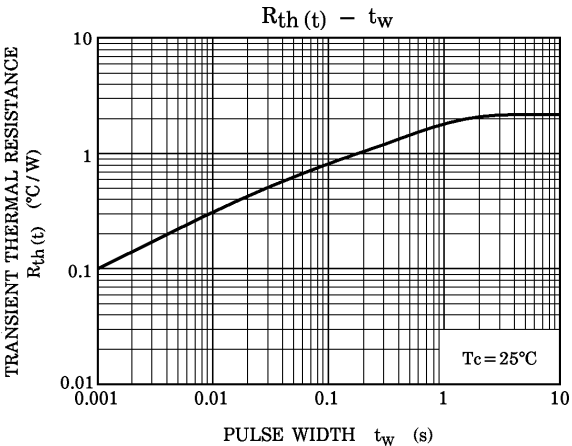
| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|--------------------------------------|-----|------------------------|-----------------|------|
| Collector-Base Voltage | | V _{CB0} | 500 | V |
| Collector-Emitter Sustaining Voltage | | V _{CEX (SUS)} | 500 | V |
| | | V _{CEO (SUS)} | 400 | |
| Emitter-Base Voltage | | V _{EBO} | 6 | V |
| Collector Current | DC | I _C | 15 | A |
| | 1ms | I _{CP} | 30 | |
| Forward Current | DC | I _F | 15 | A |
| | 1ms | I _{FM} | 30 | |
| Base Current | | I _B | 1.0 | A |
| Collector Power Dissipation | | P _C | 60 | W |
| Junction Temperature | | T _j | 150 | °C |
| Storage Temperature Range | | T _{stg} | -40~125 | °C |
| Isolation Voltage | | V _{Isol} | 2500 (AC 1Min.) | V |
| Screw Torque | | — | 1.5 | N·m |

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|--------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------|------|--------|
| Collector Cut-Off Current | | I _{CBO} | V _{CB} = 500V, I _E = 0 | — | — | 1.0 | mA |
| Emitter Cut-Off Current | | I _{EBO} | V _{BE} = 6V, I _C = 0 | — | — | 100 | mA |
| Collector-Emitter Sustaining Voltage | | V _{CEO (SUS)} | I _C = 0.5A, L = 40mH | 400 | — | — | V |
| DC Current Gain | | h _{FE} | V _{CE} = 5V, I _C = 15A | 100 | — | — | |
| Collector-Emitter Saturation Voltage | | V _{CE (sat)} | I _C = 15A, I _B = 0.4A | — | 1.3 | 2.1 | V |
| Base-Emitter Saturation Voltage | | V _{BE (sat)} | I _C = 15A, I _B = 0.4A | — | 2.0 | 2.5 | V |
| Switching Time | Turn-On Time | t _{on} | <p>INPUT OUTPUT 50µs IB1 IB2 20Ω V_{CC} = 300V</p> | — | 0.6 | 1.0 | µs |
| | Storage Time | t _{stg} | | — | 5 | 12 | |
| | Fall Time | t _f | | IB1 = -IB2 = 0.4A DUTY CYCLE = 0.5% | — | 1.5 | |
| Forward Voltage | | V _F | I _F = 15A, I _B = 0 | — | 1.5 | 2.0 | V |
| Reverse Recovery Time | | t _{rr} | I _F = 15A, V _{BE} = -2A di / dt = 60A / µs | — | — | 0.7 | µs |
| Thermal Resistance | | R _{th (j-c)} | — | — | — | 2.08 | °C / W |







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