

# 2SC4138

Silicon NPN Triple Diffused Planar Transistor (High Voltage and High Speed Switching Transistor)      Application : Switching Regulator and General Purpose

**Absolute maximum ratings** (Ta=25°C)

| Symbol | 2SC4138     | Unit |
|--------|-------------|------|
| VCBO   | 500         | V    |
| VCEO   | 400         | V    |
| VEBO   | 10          | V    |
| IC     | 10(Pulse20) | A    |
| IB     | 4           | A    |
| PC     | 80(Tc=25°C) | W    |
| TJ     | 150         | °C   |
| Tstg   | -55 to +150 | °C   |

**Electrical Characteristics** (Ta=25°C)

| Symbol   | Conditions        | 2SC4138  | Unit |
|----------|-------------------|----------|------|
| ICBO     | VCB=500V          | 100max   | μA   |
| IEBO     | VEB=10V           | 100max   | μA   |
| V(BR)CEO | IC=25mA           | 400min   | V    |
| hFE      | VCE=4V, IC=6A     | 10 to 30 |      |
| VCE(sat) | IC=6A, IB=1.2A    | 0.5max   | V    |
| VBE(sat) | IC=6A, IB=1.2A    | 1.3max   | V    |
| fr       | VCE=12V, IE=-0.7A | 10typ    | MHz  |
| COB      | VCB=10V, f=1MHz   | 85typ    | pF   |

**Typical Switching Characteristics (Common Emitter)**

| VCC (V) | RL (Ω) | IC (A) | VBB1 (V) | VBB2 (V) | IB1 (A) | IB2 (A) | ton (μs) | tstg (μs) | tf (μs) |
|---------|--------|--------|----------|----------|---------|---------|----------|-----------|---------|
| 200     | 33.3   | 6      | 10       | -5       | 0.6     | -1.2    | 1max     | 3max      | 0.5max  |

**External Dimensions MT-100(TO3P)**

