

MJE350G

Plastic Medium-Power PNP Silicon Transistor

This device is designed for use in line-operated applications such as low power, line-operated series pass and switching regulators requiring PNP capability.

Features

- High Collector–Emitter Sustaining Voltage
- Excellent DC Current Gain
- Complement to MJE340
- These Devices are Pb–Free and are RoHS Compliant*

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--|----------------|-------------|---------------------------|
| Collector–Emitter Voltage | V_{CE0} | 300 | Vdc |
| Emitter–Base Voltage | V_{EB} | 3.0 | Vdc |
| Collector Current – Continuous | I_C | 500 | mAdc |
| Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C | P_D | 20 0.16 | W mW/ $^\circ\text{C}$ |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | –65 to +150 | $^\circ\text{C}$ |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--------------------------------------|-----------------|------|---------------------------|
| Thermal Resistance, Junction–to–Case | $R_{\theta JC}$ | 6.25 | $^\circ\text{C}/\text{W}$ |

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

OFF CHARACTERISTICS

| | | | | |
|---|----------------|-----|-----|-----------------|
| Collector–Emitter Sustaining Voltage ($I_C = 1.0 \text{ mAdc}, I_B = 0$) | $V_{CE0(sus)}$ | 300 | – | Vdc |
| Collector Cutoff Current ($V_{CB} = 300 \text{ Vdc}, I_E = 0$) | I_{CBO} | – | 100 | μAdc |
| Emitter Cutoff Current ($V_{EB} = 3.0 \text{ Vdc}, I_C = 0$) | I_{EBO} | – | 100 | μAdc |

ON CHARACTERISTICS

| | | | | |
|---|----------|----|-----|---|
| DC Current Gain ($I_C = 50 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$) | h_{FE} | 30 | 240 | – |
|---|----------|----|-----|---|

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

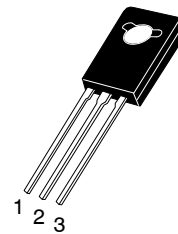
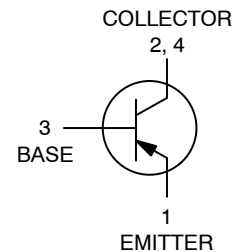
*For additional information on our Pb–Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.



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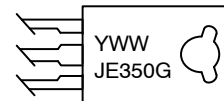
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**0.5 AMPERE
POWER TRANSISTOR
PNP SILICON
300 VOLTS, 20 WATTS**



**TO-225
CASE 77-09
STYLE 1**

MARKING DIAGRAM



Y = Year
WW = Work Week
JE350 = Device Code
G = Pb–Free Package

ORDERING INFORMATION

| Device | Package | Shipping |
|---------|---------------------|---------------|
| MJE350G | TO-225 (Pb–Free) | 500 Units/Box |

MJE350G

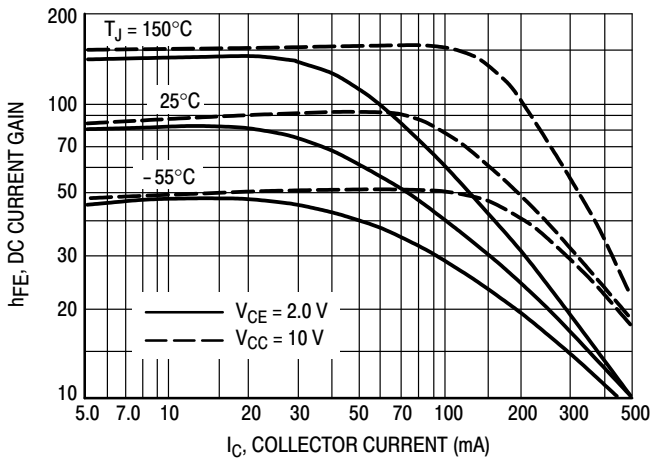


Figure 1. DC Current Gain

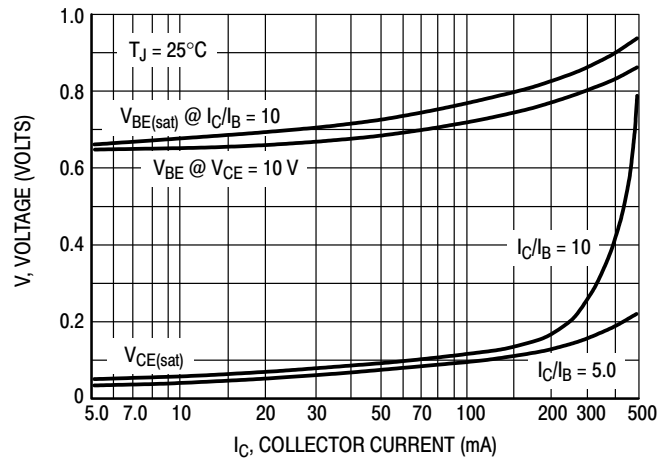


Figure 2. "On" Voltages

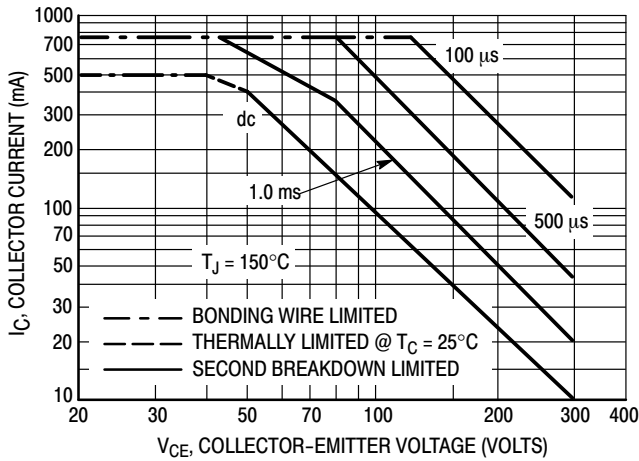


Figure 3. Active-Region Safe Operating Area

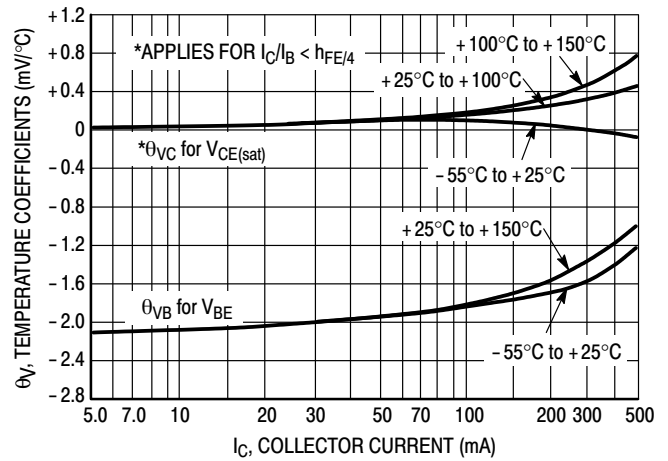


Figure 4. Temperature Coefficients

There are two limitations on the power handling ability of a transistor: average junction temperature and second breakdown. Safe operating area curves indicate $I_C - V_{CE}$ limits of the transistor that must be observed for reliable operation; i.e., the transistor must not be subjected to greater dissipation than the curves indicate.

The data of Figure 3 is based on $T_{J(pk)} = 150^\circ\text{C}$; T_C is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(pk)} \leq 150^\circ\text{C}$. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

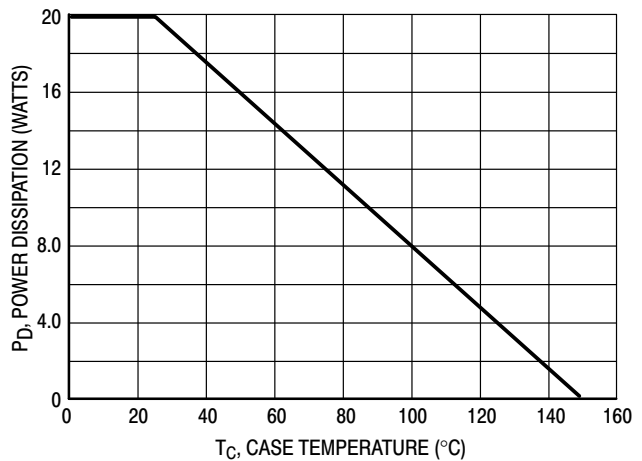
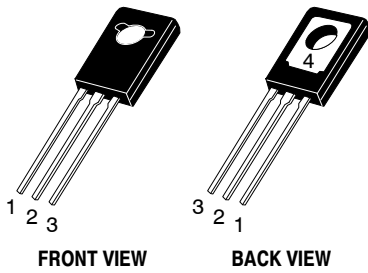


Figure 5. Power Derating

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

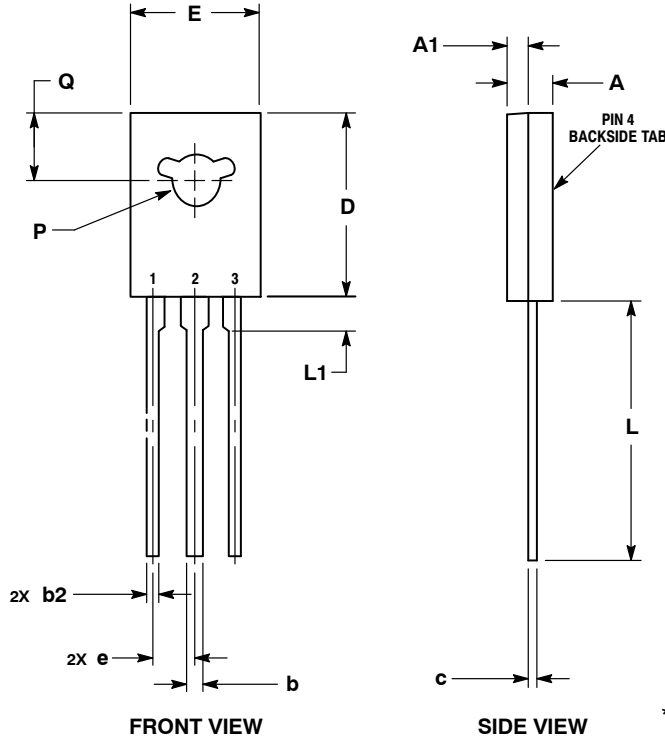
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DATE 25 MAR 2015

SCALE 1:1

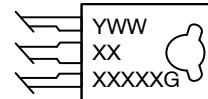


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. NUMBER AND SHAPE OF LUGS OPTIONAL.

| DIM | MILLIMETERS | |
|-----|-------------|-------|
| | MIN | MAX |
| A | 2.40 | 3.00 |
| A1 | 1.00 | 1.50 |
| b | 0.60 | 0.90 |
| b2 | 0.51 | 0.88 |
| c | 0.39 | 0.63 |
| D | 10.60 | 11.10 |
| E | 7.40 | 7.80 |
| e | 2.04 | 2.54 |
| L | 14.50 | 16.63 |
| L1 | 1.27 | 2.54 |
| P | 2.90 | 3.30 |
| Q | 3.80 | 4.20 |

GENERIC MARKING DIAGRAM*



- Y = Year
- WW = Work Week
- XXXXX = Device Code
- G = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "µ", may or may not be present.

- | | | | | |
|---|---|---|---|---|
| <p>STYLE 1: PIN 1. EMITTER 2., 4. COLLECTOR 3. BASE</p> | <p>STYLE 2: PIN 1. CATHODE 2., 4. ANODE 3. GATE</p> | <p>STYLE 3: PIN 1. BASE 2., 4. COLLECTOR 3. EMITTER</p> | <p>STYLE 4: PIN 1. ANODE 1 2., 4. ANODE 2 3. GATE</p> | <p>STYLE 5: PIN 1. MT 1 2., 4. MT 2 3. GATE</p> |
| <p>STYLE 6: PIN 1. CATHODE 2., 4. GATE 3. ANODE</p> | <p>STYLE 7: PIN 1. MT 1 2., 4. GATE 3. MT 2</p> | <p>STYLE 8: PIN 1. SOURCE 2., 4. GATE 3. DRAIN</p> | <p>STYLE 9: PIN 1. GATE 2., 4. DRAIN 3. SOURCE</p> | <p>STYLE 10: PIN 1. SOURCE 2., 4. DRAIN 3. GATE</p> |

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