



**MJD44H11**  
**MJD45H11**

## COMPLEMENTARY SILICON PNP TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- LOW COLLECTOR-EMITTER SATURATION VOLTAGE
- FAST SWITCHING SPEED
- SURFACE-MOUNTING TO-252 (DPAK) POWER PACKAGE IN TAPE & REEL (SUFFIX "T4")

### APPLICATIONS

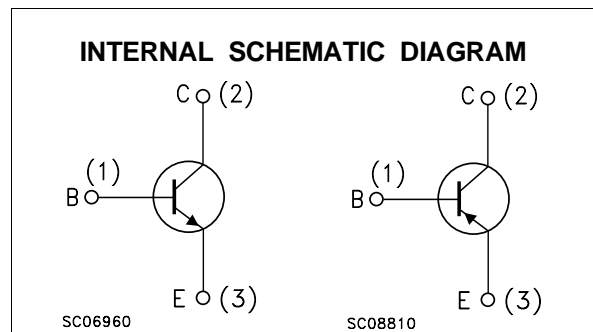
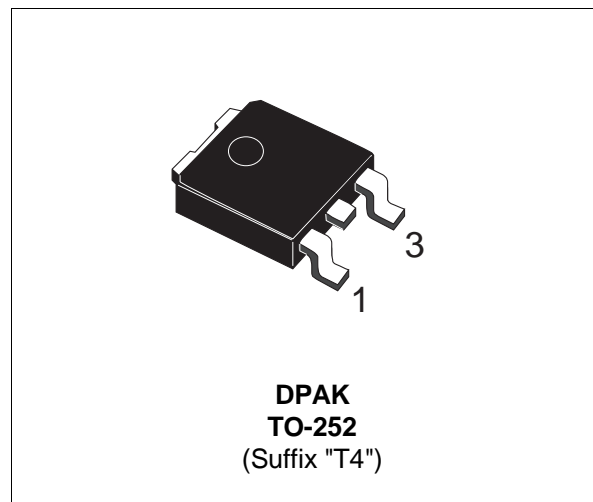
- GENERAL PURPOSE SWITCHING
- GENERAL PURPOSE AMPLIFIER

### DESCRIPTION

The MJD44H11 is a Silicon Multiepitaxial Planar NPN transistor mounted in DPAK plastic package.

It is intended for various switching and general purpose applications.

The complementary PNP type is MJD45H11



### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Parameter  | Value |            | Unit             |
|-----------|--|-------|------------|------------------|
|           |  | NPN   | MJD44H11   |                  |
|           |  | PNP   | MJD45H11   |                  |
| $V_{CEO}$ | Collector-Emitter Voltage ( $I_B = 0$ )          |       | 80         | V                |
| $V_{EBO}$ | Emitter-Base Voltage ( $I_C = 0$ )               |       | 5          | V                |
| $I_C$     | Collector Current                                |       | 8          | A                |
| $I_{CM}$  | Collector Peak Current                           |       | 16         | A                |
| $P_{tot}$ | Total Dissipation at $T_c \leq 25^\circ\text{C}$ |       | 20         | W                |
| $T_{stg}$ | Storage Temperature                              |       | -55 to 150 | $^\circ\text{C}$ |
| $T_j$     | Max. Operating Junction Temperature              |       | 150        | $^\circ\text{C}$ |

For PNP types the values are intended negative.

# MJD44H11 / MJD45H11

## THERMAL DATA

|                       |                                  |     |      |      |
|-----------------------|----------------------------------|-----|------|------|
| R <sub>thj-case</sub> | Thermal Resistance Junction-case | Max | 6.25 | °C/W |
|-----------------------|----------------------------------|-----|------|------|

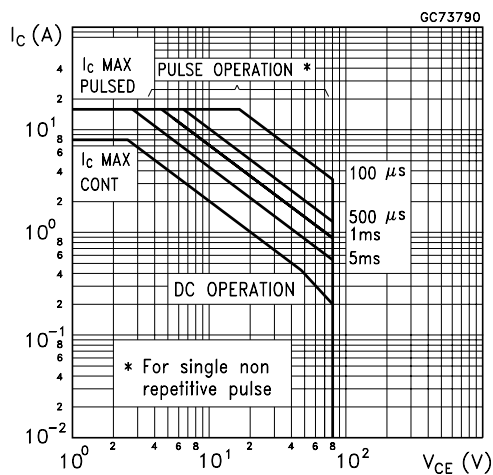
## ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

| Symbol                  | Parameter                            | Test Conditions  | Min.     | Typ. | Max. | Unit |
|-------------------------|--------------------------------------|--|----------|------|------|------|
| V <sub>CEO(sus)</sub> * | Collector-Emitter Sustaining Voltage | I <sub>C</sub> = 30 mA   | 80       |      |      | V    |
| I <sub>CES</sub>        | Collector Cut-off Current            | V <sub>CB</sub> = rated V <sub>CEO</sub> V <sub>BE</sub> = 0                             |          |      | 10   | μA   |
| I <sub>EBO</sub>        | Emitter Cut-off Current              | V <sub>EB</sub> = 5V   |          |      | 50   | μA   |
| V <sub>CE(sat)</sub> *  | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 8 A I <sub>B</sub> = 0.4 A  |          |      | 1    | V    |
| V <sub>BE(sat)</sub> *  | Base-Emitter Saturation Voltage      | I <sub>C</sub> = 8 A I <sub>B</sub> = 0.8 A  |          |      | 1.5  | V    |
| h <sub>FE</sub> *       | DC Current Gain                      | I <sub>C</sub> = 2 A V <sub>CE</sub> = 1 V<br>I <sub>C</sub> = 4 A V <sub>CE</sub> = 1 V | 60<br>40 |      |      |      |

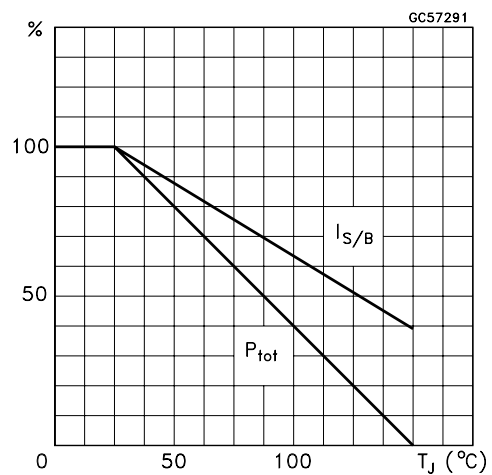
\* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 2 %

\* For PNP types the values are intended negative.

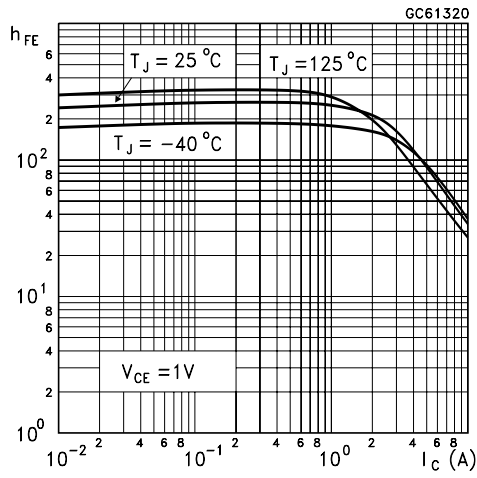
## Safe Operating Area



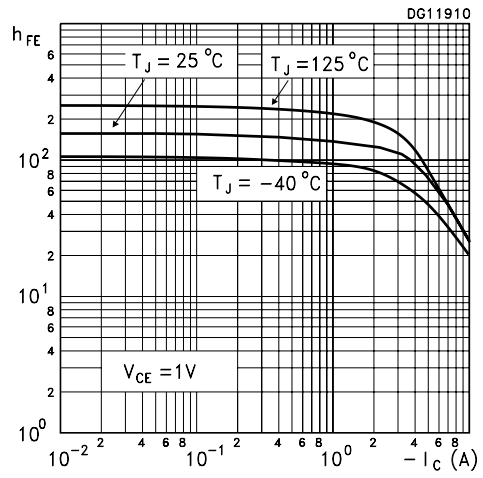
## Derating Curves



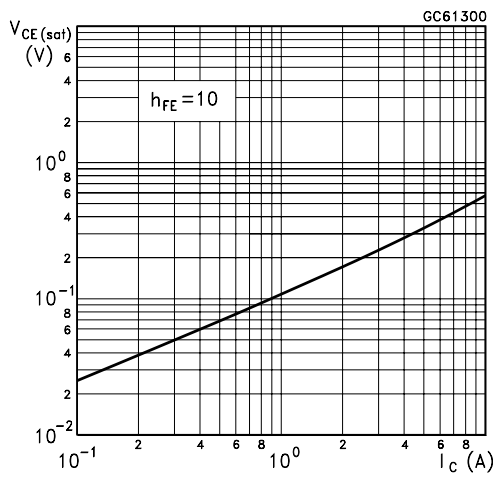
DC Current Gain (NPN type)



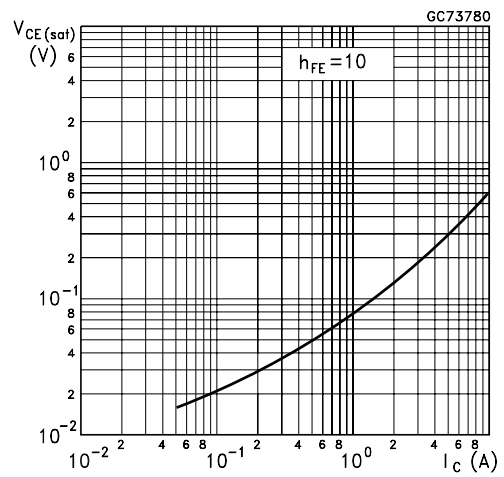
DC Current Gain (PNP type)



Collector-Emitter Saturation Voltage (NPN type)

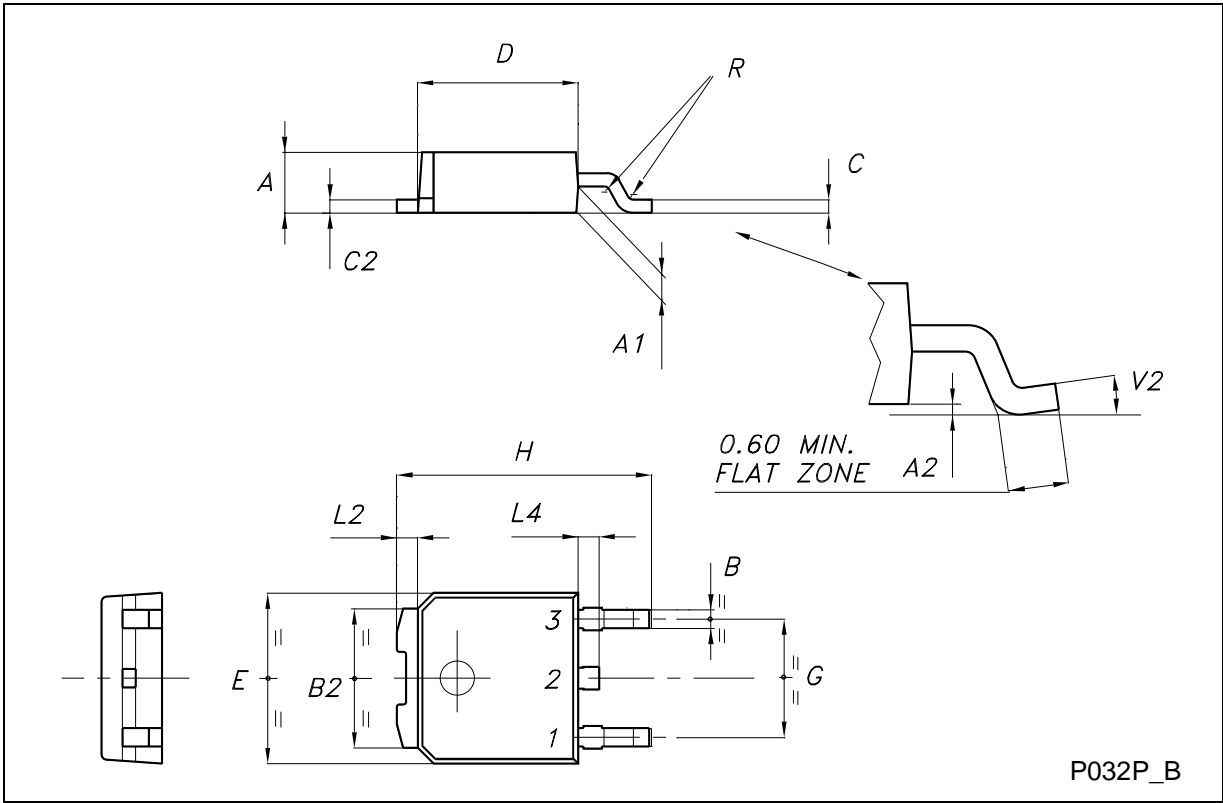


Collector-Emitter Saturation Voltage (PNP type)



**TO-252 (DPAK) MECHANICAL DATA**

| DIM. | mm   |      |       | inch  |       |       |
|------|------|------|-------|-------|-------|-------|
|      | MIN. | TYP. | MAX.  | MIN.  | TYP.  | MAX.  |
| A    | 2.20 |      | 2.40  | 0.087 |       | 0.094 |
| A1   | 0.90 |      | 1.10  | 0.035 |       | 0.043 |
| A2   | 0.03 |      | 0.23  | 0.001 |       | 0.009 |
| B    | 0.64 |      | 0.90  | 0.025 |       | 0.035 |
| B2   | 5.20 |      | 5.40  | 0.204 |       | 0.213 |
| C    | 0.45 |      | 0.60  | 0.018 |       | 0.024 |
| C2   | 0.48 |      | 0.60  | 0.019 |       | 0.024 |
| D    | 6.00 |      | 6.20  | 0.236 |       | 0.244 |
| E    | 6.40 |      | 6.60  | 0.252 |       | 0.260 |
| G    | 4.40 |      | 4.60  | 0.173 |       | 0.181 |
| H    | 9.35 |      | 10.10 | 0.368 |       | 0.398 |
| L2   |      | 0.8  |       |       | 0.031 |       |
| L4   | 0.60 |      | 1.00  | 0.024 |       | 0.039 |
| V2   | 0°   |      | 8°    | 0°    |       | 0°    |



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