



MJD2955
MJD3055

COMPLEMENTARY SILICON POWER TRANSISTORS

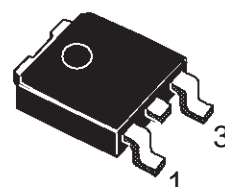
- STM PREFERRED SALESTYPES
- SURFACE-MOUNTING TO-252 (DPAK)
POWER PACKAGE IN TAPE & REEL
(SUFFIX "T4")
- ELECTRICAL SIMILAR TO MJE2955 AND
MJE3055

APPLICATIONS

- GENERAL PURPOSE SWITCHING AND
AMPLIFIER TRANSISTORS

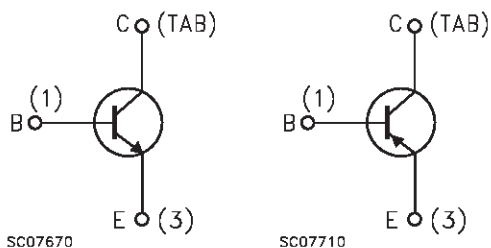
DESCRIPTION

The MJD2955 and MJD3055 form complementary PNP-NPN pairs. They are manufactured using Epitaxial Base technology for cost-effective performance.



**DPAK
TO-252**
(Suffix "T4")

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | | Unit |
|-----------|---|-------|---------|------|
| | | NPN | MJD3055 | |
| | | PNP | MJD2955 | |
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | 60 | | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | 70 | | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | 5 | | V |
| I_C | Collector Current | 10 | | A |
| I_B | Base Current | 6 | | A |
| P_{tot} | Total Dissipation at $T_c = 25^\circ\text{C}$ | 20 | | W |

THERMAL DATA

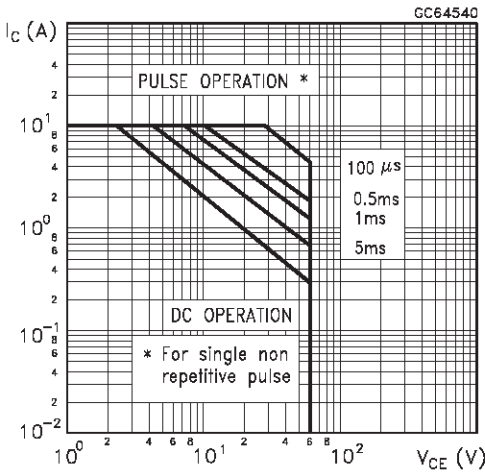
| | | | | |
|-----------------------|-------------------------------------|-----|------|------|
| R _{thj-case} | Thermal Resistance Junction-case | Max | 6.25 | °C/W |
| R _{thj-amb} | Thermal Resistance Junction-ambient | Max | 100 | °C/W |

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

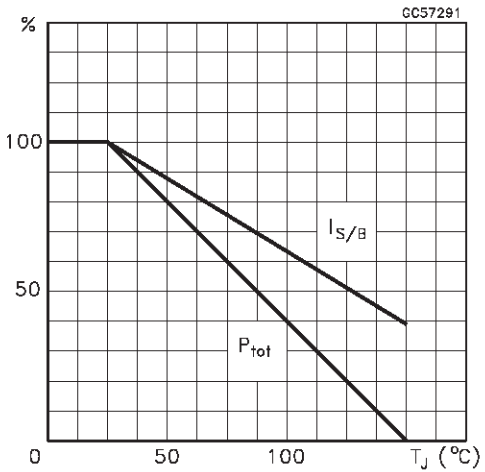
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------------|--|--|---------|------|----------|----------|
| I _{CEX} | Collector Cut-off Current | V _{CB} = 70 V V _{BE} = -1.5V V _{CB} = 70 V V _{BE} = -1.5V T _J = 150 °C | | | 0.2 2 | μA μA |
| I _{CBO} | Collector Cut-off Current (I _E = 0) | V _{CB} = 70 V V _{CB} = 70 V T _J = 150 °C | | | 0.2 2 | μA μA |
| I _{CEO} | Collector Cut-off Current (I _B = 0) | V _{CB} = 30 V | | | 50 | μA |
| I _{EBO} | Emitter Cut-off Current (I _C = 0) | V _{EB} = 5 V | | | 0.5 | mA |
| V _{CEO(sus)} | Collector-Emitter Sustaining Voltage | I _C = 30 mA | 60 | | | V |
| V _{CE(sat)*} | Collector-Emitter Saturation Voltage | I _C = 4 A I _B = 0.4 A I _C = 10 A I _B = 3.3 A | | | 1.1 8 | V |
| V _{BE(on)*} | Base-Emitter Voltage | I _C = 4 A V _{CE} = 4 V | | | 1.8 | V |
| h _{FE*} | DC Current Gain | I _C = 4 A V _{CE} = 4 V I _C = 10 A V _{CE} = 4 V | 20 5 | | 100 | |
| f _T | DC Current Gain | I _C = 0.5 A V _{CE} = 10 V f = 500 KHz | 2 | | | MHz |

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %
For PNP type voltage and current values are negative.

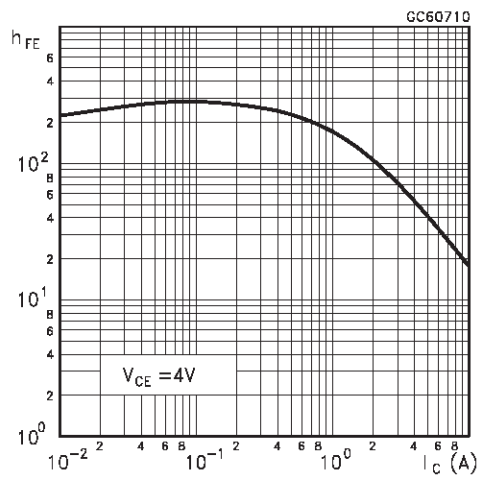
Safe Operating Area



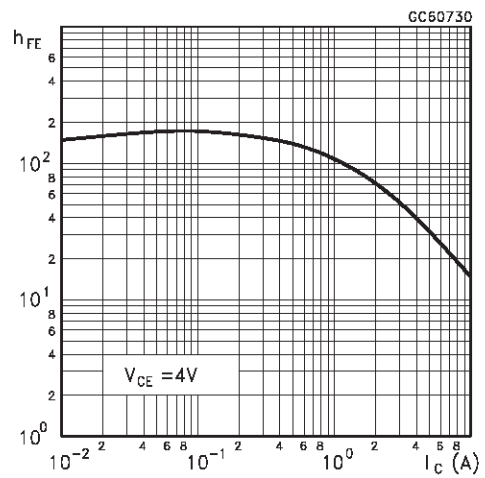
Derating Curves



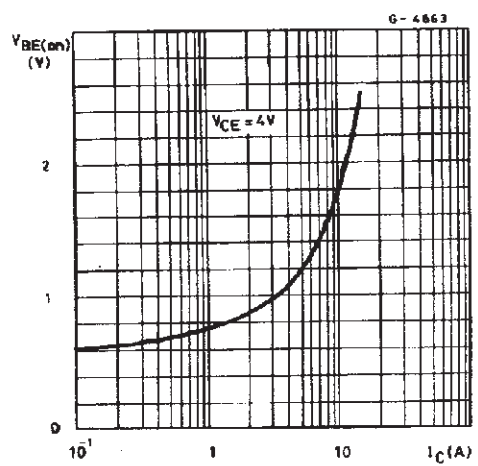
DC Current Gain (NPN type)



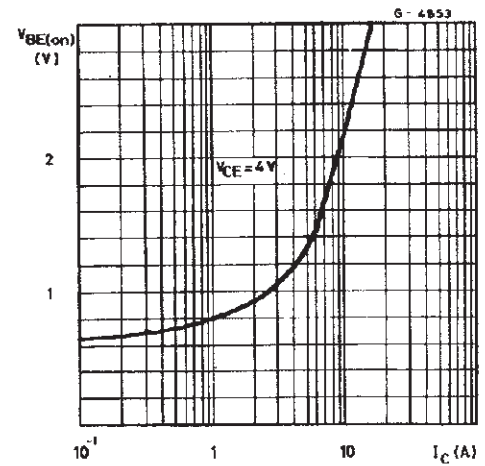
DC Current Gain (PNP type)



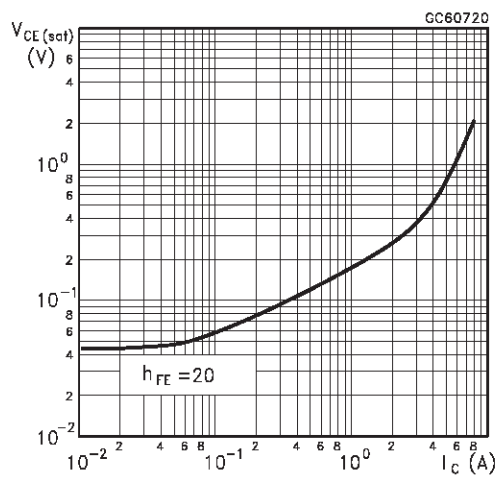
DC Transconductance



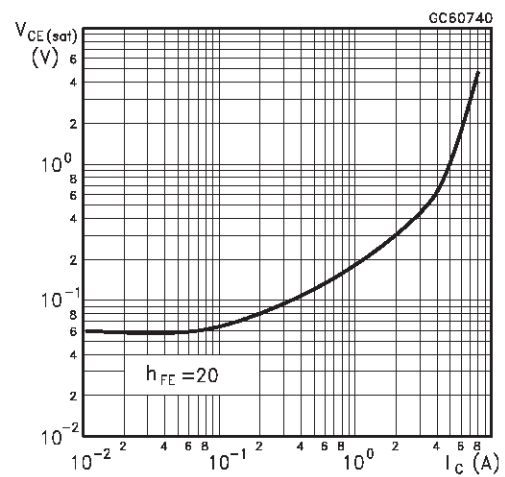
DC Transconductance (PNP type)



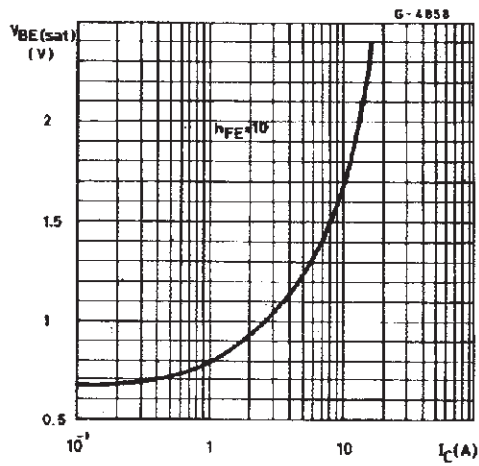
Collector-Emitter Saturation Voltage (NPN type)



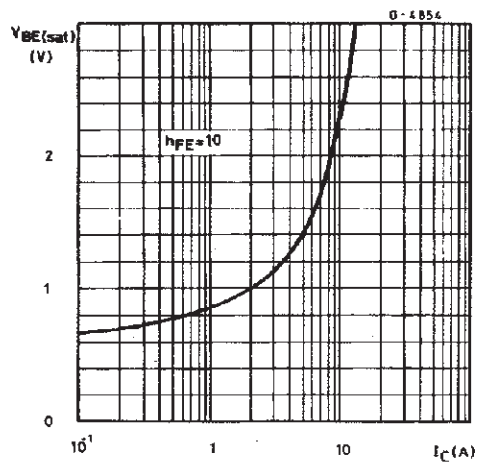
Collector-Emitter Saturation Voltage (PNP type)



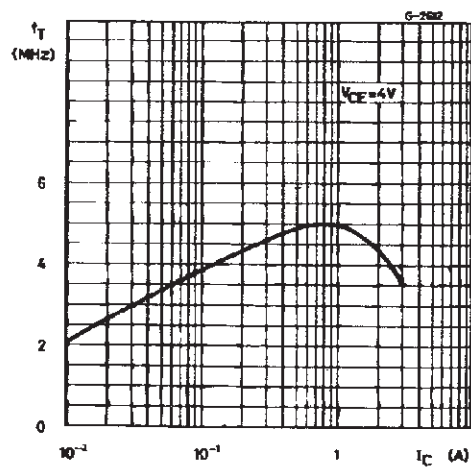
Base-Emitter Saturation Voltage (NPN type)



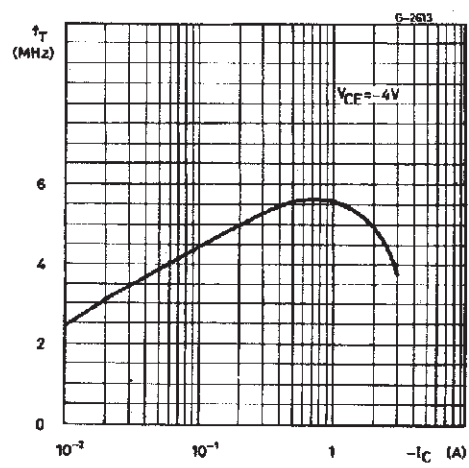
Base-Emitter Saturation Voltage (PNP type)



Transition Frequency (NPN type)

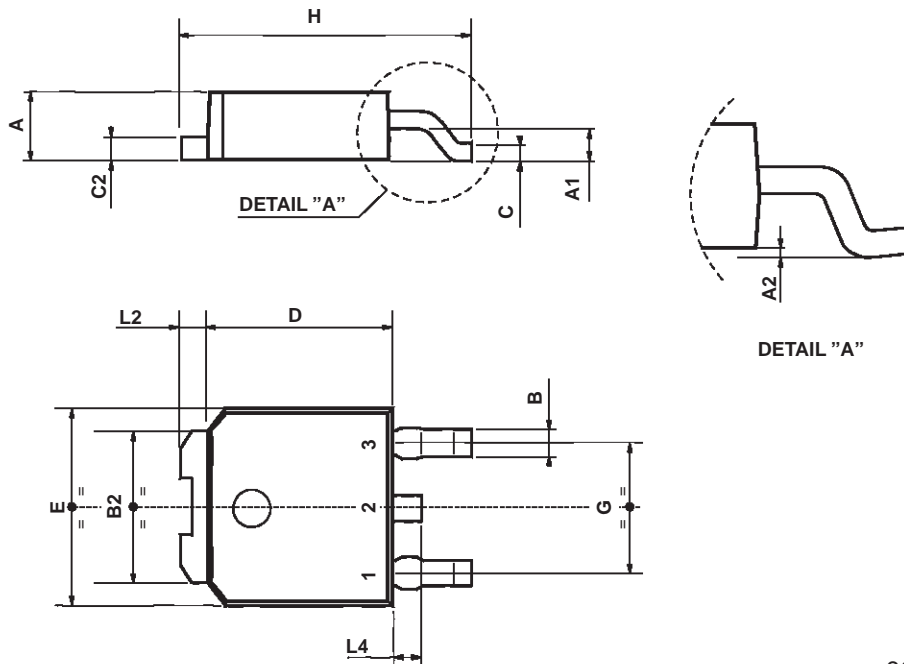


Transition Frequency (PNP type)



TO-252 (DPAK) MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------|------|------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 2.2 | | 2.4 | 0.086 | | 0.094 |
| A1 | 0.9 | | 1.1 | 0.035 | | 0.043 |
| A2 | 0.03 | | 0.23 | 0.001 | | 0.009 |
| B | 0.64 | | 0.9 | 0.025 | | 0.035 |
| B2 | 5.2 | | 5.4 | 0.204 | | 0.212 |
| C | 0.45 | | 0.6 | 0.017 | | 0.023 |
| C2 | 0.48 | | 0.6 | 0.019 | | 0.023 |
| D | 6 | | 6.2 | 0.236 | | 0.244 |
| E | 6.4 | | 6.6 | 0.252 | | 0.260 |
| G | 4.4 | | 4.6 | 0.173 | | 0.181 |
| H | 9.35 | | 10.1 | 0.368 | | 0.397 |
| L2 | | 0.8 | | | 0.031 | |
| L4 | 0.6 | | 1 | 0.023 | | 0.039 |



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