Central
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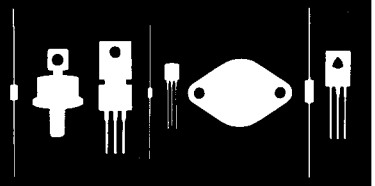

# 2N5056
# 2N5057

## PNP SILICON SWITCHING TRANSISTOR

JEDEC TO-18 CASE*

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5056, 2N5057 types are Silicon PNP Saturated Switching Transistors designed for high speed switching applications.

## MAXIMUM RATINGS ($T_A$=25°C unless otherwise noted)

| | SYMBOL | | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 15 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 15 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 4.5 | V |
| Collector Current | $I_C$ | 200 | mA |
| Power Dissipation | $P_D$ | 0.5 | W |
| Power Dissipation ($T_C$=25°C) | $P_D$ | 1.2 | W |
| Operating and Storage Junction Temperature | $T_J$, $T_{stg}$ | -65 TO +200 | °C |

## ELECTRICAL CHARACTERISTICS ($T_A$=25°C unless otherwise noted)

| SYMBOL | TEST CONDITIONS | 2N5056 MIN | 2N5056 MAX | 2N5057 MIN | 2N5057 MAX | UNIT |
|---|---|---|---|---|---|---|
| $I_{CES}$ | $V_{CE}$=10V | | 50 | | 50 | nA |
| $I_{CES}$ | $V_{CE}$=10V, $T_A$=125°C | | 10 | | 10 | µA |
| $BV_{CBO}$ | $I_C$=10µA | 15 | | 15 | | V |
| $BV_{CES}$ | $I_C$=10µA | 15 | | 15 | | V |
| $BV_{CEO}$ | $I_C$=10mA | 15 | | 15 | | V |
| $BV_{EBO}$ | $I_E$=100µA | 4.5 | | 4.5 | | V |
| $V_{CE(SAT)}$ | $I_C$=10mA, $I_B$=1.0mA | | 0.13 | | 0.13 | V |
| $V_{CE(SAT)}$ | $I_C$=30mA, $I_B$=3.0mA | | 0.19 | | 0.19 | V |
| $V_{CE(SAT)}$ | $I_C$=100mA, $I_B$=10mA | | 0.45 | | 0.45 | V |
| $V_{BE(SAT)}$ | $I_C$=10mA, $I_B$=1.0mA | | 0.92 | | 0.92 | V |
| $V_{BE(SAT)}$ | $I_C$=30mA, $I_B$=3.0mA | | 1.15 | | 1.15 | V |
| $V_{BE(SAT)}$ | $I_C$=100mA, $I_B$=10mA | | 1.5 | | 1.5 | V |
| $h_{FE}$ | $V_{CE}$=0.5V, $I_C$=1.0mA | 12 | | 20 | | |
| $h_{FE}$ | $V_{CE}$=0.3V, $I_C$=10mA | 20 | | 30 | | |
| $h_{FE}$ | $V_{CE}$=0.5V, $I_C$=30mA | 30 | 100 | 40 | 100 | |
| $h_{FE}$ | $V_{CE}$=1.0V, $I_C$=100mA | 20 | | 30 | | |
| $f_T$ | $V_{CE}$=10V, $I_C$=30mA, f=100MHz | 600 | | 800 | | MHz |
| $C_{ob}$ | $V_{CB}$=5.0V, $I_E$=0 | | 4.5 | | 4.5 | pF |
| $C_{ib}$ | $V_{EB}$=0.5V, $I_C$=0 | | 6.0 | | 6.0 | pF |
| $t_{on}$ | $V_{CC}$=3.0V, $I_C$=30mA, $I_{B1}$=3.0mA | | 20 | | 20 | ns |
| $t_{off}$ | $V_{CC}$=3.0V, $I_C$=30mA, $I_{B1}$=$I_{B2}$=3.0mA | | 35 | | 35 | ns |
| $t_s$ | $V_{CC}$=3.0V, $I_C$=10mA, $I_{B1}$=$I_{B2}$=10mA | | 30 | | 30 | ns |

* Conforms to JEDEC To-18 Case except MIN. CAN HEIGHT is .115 inches (instead of .170)

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