

SILICON MULTI-EPITAXIAL NPN TRANSISTOR

2N6277

- High V_{CE0} .
- High DC Current Gain, h_{FE} .
- Low Collector-Emitter Saturation Voltage, $V_{CE(sat)}$.
- Fast Switching.
- Hermetic TO3 Metal package.
- Ideally suited for Power Amplifier and Switching Applications.
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage	180V
V_{CEO}	Collector – Emitter Voltage	150V
V_{EBO}	Emitter – Base Voltage	6V
I_C	Continuous Collector Current	50A
I_{CM}	Peak Collector Current	100A
I_B	Base Current	20A
P_D	Total Power Dissipation at $T_C = 25^\circ\text{C}$ Derate Above 25°C	250W 1.43W/ $^\circ\text{C}$
T_J	Junction Temperature Range	-65 to +200 $^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65 to +200 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			0.7	$^\circ\text{C/W}$

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$	150			V
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 75\text{V}$ $I_B = 0$			50	μA
I_{CEX}	Collector Cut-Off Current	$V_{CE} = 180\text{V}$ $V_{BE} = -1.5\text{V}$ $T_A = 150^\circ\text{C}$			10	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 6\text{V}$ $I_C = 0$			100	μA
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 180\text{V}$ $I_E = 0$			10	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 1.0\text{A}$ $V_{CE} = 4\text{V}$	50			
		$I_C = 20\text{A}$ $V_{CE} = 4\text{V}$ $T_A = -55^\circ\text{C}$	30		120	
		$I_C = 50\text{A}$ $V_{CE} = 4\text{V}$	10			
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 20\text{A}$ $I_B = 2\text{A}$			1.0	V
		$I_C = 50\text{A}$ $I_B = 10\text{A}$			3.0	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 20\text{A}$ $I_B = 2\text{A}$			1.8	
		$I_C = 50\text{A}$ $I_B = 10\text{A}$			3.5	
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 20\text{A}$ $V_{CE} = 4\text{V}$			1.8	

DYNAMIC CHARACTERISTICS

$ h_{fe} $	Small signal forward-current transfer ratio	$I_C = 1.0\text{A}$ $V_{CE} = 10\text{V}$ $f = 10\text{MHz}$	2		12	
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			600	μF
t_{on}	Turn-On Time	$I_C = 20\text{A}$ $V_{CC} = 80\text{V}$ $I_{B1} = 2\text{A}$			0.5	μs
t_{off}	Turn-Off Time	$I_C = 20\text{A}$ $V_{CC} = 80\text{V}$ $I_{B1} = -I_{B2} = 2\text{A}$			1.6	

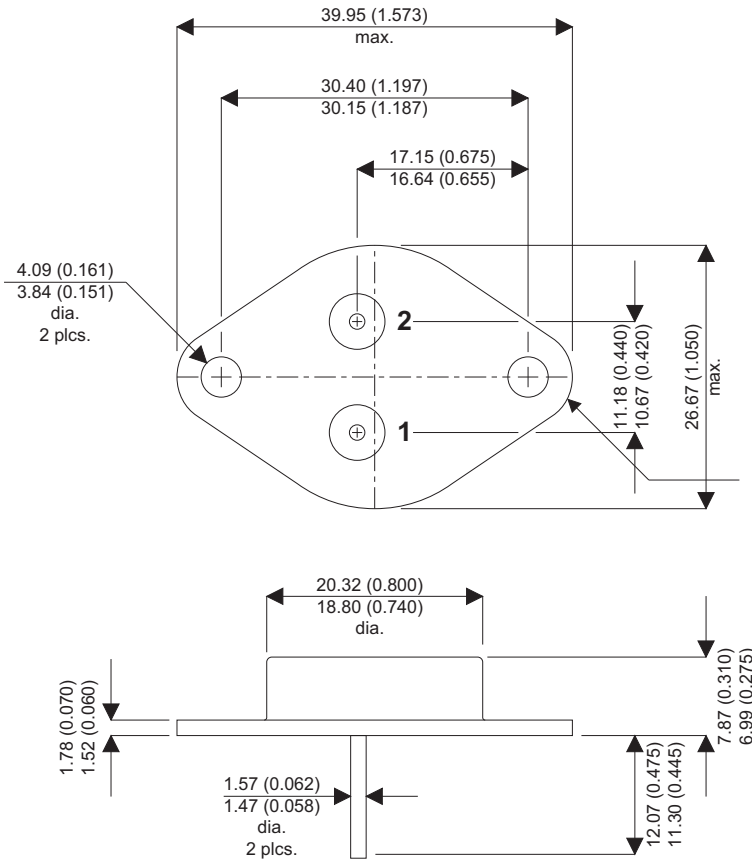
Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

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MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AE)

Pin 1 - Base

Pin 2 - Emitter

Case - Collector