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MPSA55 & MPSA56 Silicon PNP Transistor General Purpose Amplifier

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CES}		
MPSA55	.....	60V
MPSA56	.....	80V
Collector–Base Voltage, V_{CBO}		
MPSA55	.....	60V
MPSA56	.....	80V
Emitter–Base Voltage, V_{EBO}	.....	4V
Continuous Collector Current, I_C	.....	500mA
Total Device Dissipation ($T_A = 25^\circ\text{C}$), P_D	.....	625mW
Derate Above 25°C}	.....	5mW/ $^\circ\text{C}$
Total Device Dissipation ($T_C = 25^\circ\text{C}$), P_D	.....	1.5W
Derate Above 25°C}	.....	12mW/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	.....	-55° to $+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	.....	-55° to $+150^\circ\text{C}$
Thermal Resistance, Junction–to–Case, R_{qJC}	.....	83.3 $^\circ\text{C}/\text{W}$
Thermal Resistance, Junction–to–Ambient, R_{qJA} (Note 1)	.....	200 $^\circ\text{C}/\text{W}$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1.0\text{mA}, I_B = 0$, Note 2	60	–	–	V
MPSA55						
MPSA56			80	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\text{mA}, I_C = 0$	4.0	–	–	V
Collector Cutoff Current	I_{CES}	$V_{CE} = 60\text{V}, I_B = 0$	–	–	0.1	mA
Collector Cutoff Current	I_{CBO}	$V_{CB} = 60\text{V}, I_E = 0$	–	–	0.1	mA
MPSA55						
MPSA56		$V_{CB} = 80\text{V}, I_E = 0$	–	–	0.1	mA
ON Characteristics						
DC Current Gain	h_{FE}	$V_{CE} = 1.0\text{V}, I_C = 10\text{mA}$	100	–	–	
		$V_{CE} = 1.0\text{V}, I_C = 100\text{mA}$	100	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 100\text{mA}, I_B = 10\text{mA}$	–	–	0.25	V
Base–Emitter Saturation Voltage	$V_{BE(on)}$	$I_C = 100\text{mA}, V_{CE} = 1.0\text{V}$	–	–	1.2	V

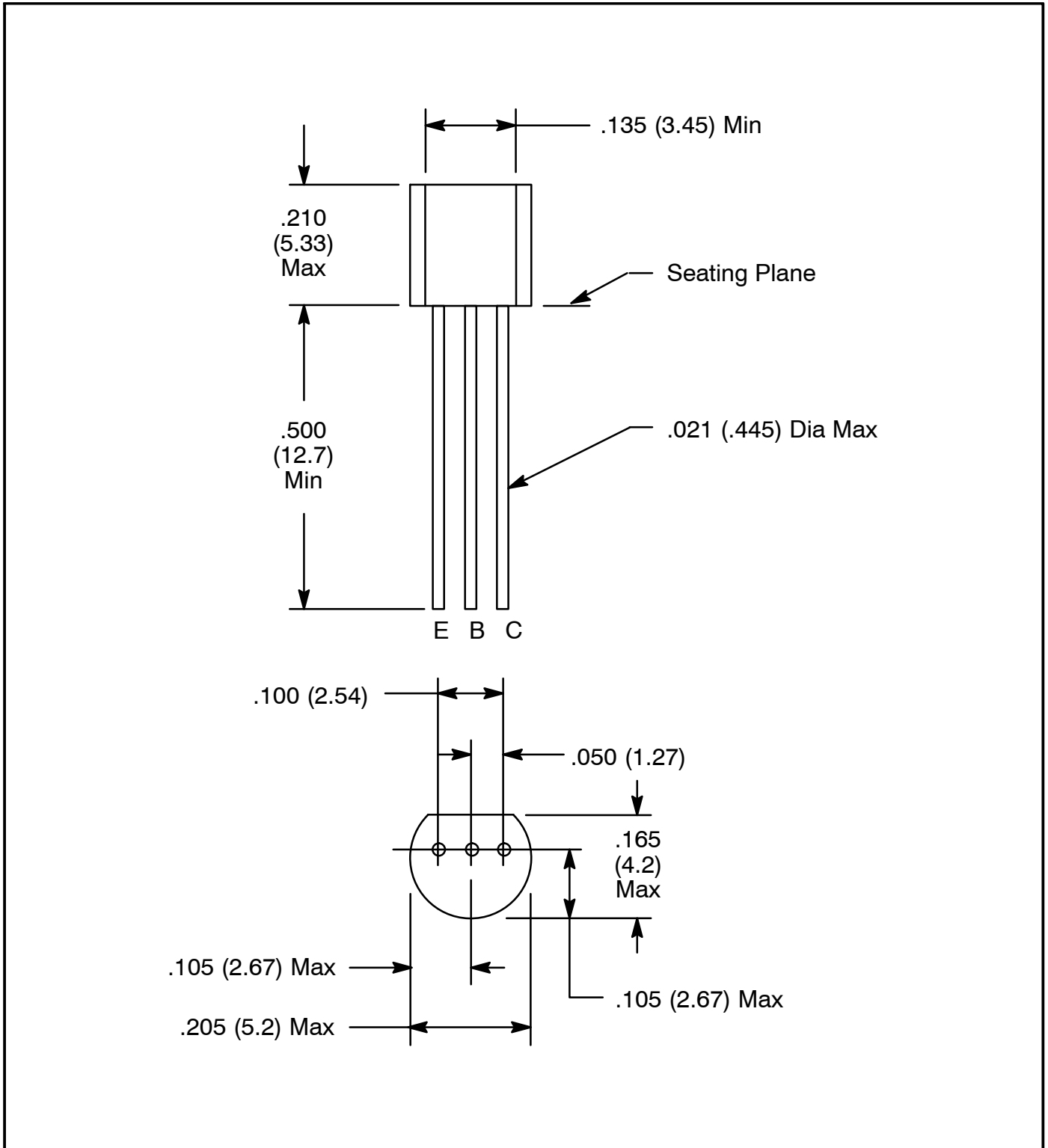
Note 1. R_{qJA} is measured with the device soldered into a typical printed circuit board.

Note 2. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Small Signal Characteristics						
Current Gain Bandwidth Product	f_t	$I_C = 100\text{mA}$, $V_{CE} = 1\text{V}$, $f = 100\text{MHz}$, Note 3	50	-	-	MHz

Note 3. f_t is defined as the frequency at which $|h_{fe}|$ extrapolates to unity.



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