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MJE180 Silicon NPN Transistor Low Power Audio Amp, Low Current, High Speed Switch TO-126 Type Package

Absolute Maximum Ratings: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Collector Base Voltage, V_{CBO}	60V
Collector Emitter Voltage, V_{CEO}	40V
Emitter Base Voltage, V_{EBO}	7V
Collector Current, I_C	
Continuous	3A
Peak	6A
Base Current, I_B	1A
Total Device Dissipation, P_D	
$T_C = +25^\circ\text{C}$	12.5W
$T_A = +25^\circ\text{C}$	1.5W
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	-65° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristics						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	40	-	-	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 60\text{V}, I_B = 0$	-	-	0.1	μA
		$V_{CB} = 60\text{V}, I_E = 0, T_C = 150^\circ\text{C}$	-	-	0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 7\text{V}, I_C = 0$	-	-	0.1	μA
On Characteristics						
DC Current Gain	h_{FE}	$V_{CE} = 1\text{V}, I_C = 100\text{mA}$	50	-	250	
		$V_{CE} = 1\text{V}, I_C = 500\text{mA}$	30	-	-	
		$V_{CE} = 1\text{V}, I_C = 1.5\text{A}$	12	-	-	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$	-	-	0.3	V
		$I_C = 1.5\text{A}, I_B = 150\text{mA}$	-	-	0.9	V
		$I_C = 3\text{A}, I_B = 600\text{mA}$	-	-	1.7	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1.5\text{A}, I_B = 150\text{mA}$	-	-	1.5	V
		$I_C = 3\text{A}, I_B = 600\text{mA}$	-	-	2.0	V
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C = 500\text{mA}, V_{CE} = 1\text{V}$	-	-	1.2	V
Dynamic Characteristics						
Current-Gain - Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 100\text{mA},$	50	-	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$	-	-	30	pF

