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MJE2955T (PNP and MJE3055T (NPN)
Silicon Complementary Transistors
Audio Power Amp, Switch
TO–220 Type Package

Description:

The MJE2955T (PNP) and MJE3055T (NPN) are silicon complementary power transistors in a TO–220 plastic package intended for use in general purpose amplifier and switching applications.

Features:

- High Current Gain – Bandwidth Product

Absolute Maximum Ratings: (Note 1)

Collector–Emitter Voltage, V_{CEO} 60V
Collector–Base Voltage, V_{CB} 70V
Emitter–Base Voltage, V_{EB} 5V
Collector Current, I_C 10A
Base Current, I_B 6A
Total Power Dissipation (T_C = +25°C), P_D 75W
Derate Above +25°C . . . . . 0.6W/°C
Operating Junction Temperature Range, T_J . . . . . –55° to +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 1.67°C/W Max

Note 1. Stresses exceeding those listed in the Absolute Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Electrical Characteristics: (T_C = +25°C, Note 2 unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
OFF Characteristics							
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	I_B = 0, I_C = 200mA, Note 3		60	–	–	V
Collector Cutoff Current	I_{CEO}	I_B = 0, V_{CE} = 30V		–	–	700	μA
	I_{CEX}	V_{CE} = 70V, $V_{EB(off)}$ = 1.5V		–	–	1.0	mA
			T_C = +150°C	–	–	5.0	mA
	I_{CBO}	V_{CB} = 70V, I_E = 0		–	–	1.0	mA
			T_C = +150°C	–	–	10	mA
Emitter Cutoff Current	I_{EBO}	I_C = 0, V_{BE} = 5V		–	–	5	mA

Note 2. Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise specified. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Note 3. Pulsed; Pulse Duration ≤ 300μs, Duty Cycle ≤ 20%.

RoHS

Electrical Characteristics (Cont'd): (T_C = +25°C, Note 2 unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 3)						
DC Current Gain	h_{FE}	I_C = 4A, V_{CE} = 4V	20	–	100	
		I_C = 10A, V_{CE} = 4V	5	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 4A, I_B = 0.4A	–	–	1.1	V
		I_C = 10A, I_B = 3.3A	–	–	8.0	V
Base–Emitter ON Voltage	$V_{BE(on)}$	I_C = 4A, V_{CE} = 4V	–	–	1.8	V
Dynamic Characteristics						
Current Gain – Bandwidth Product	f_T	I_C = 0.5A, V_{CE} = 10V, f = 500kHz	2	–	–	MHz

Note 2. Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise specified. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Note 3. Pulsed; Pulse Duration ≤ 300μs, Duty Cycle ≤ 20%.