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MJE182 Silicon NPN Transistor High Current Switch TO-126LP Type Package

Features:

- High Current Gain–Bandwidth Product
- High DC Current Gain
- Fast Switching Time

Absolute Maximum Ratings:

Collector Base Voltage, V_{CB}	100V
Collector Emitter Voltage, V_{CEO}	80V
Emitter Base Voltage, V_{EB}	7V
Base Current, I_B	1A
Collector Current, I_C	
Continuous	3A
Peak	6A
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	12.5W
Derate Above 25°C	0.012W/ $^\circ\text{C}$
Total Device Dissipation ($T_A = +25^\circ\text{C}$), P_D	1.5W
Derate Above 25°C	0.1W/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-65° to $+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ\text{C}$
Thermal Resistance, Junction–to–Case, R_{thJC}	10 $^\circ\text{C}/\text{W}$
Thermal Resistance, Junction–to–Ambient, R_{thJA}	83.4 $^\circ\text{C}/\text{W}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristics						
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$V_{EB} = 4V, I_C = 0$	–	–	1.0	μA
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100V, I_E = 0$	–	–	0.1	μA
		$V_{CB} = 100V, I_E = 0, T_C = 150^\circ\text{C}$	–	–	0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4V, I_C = 0$	–	–	1.0	μA
On Characteristics						
DC Current Gain	h_{FE}	$V_{CE} = 1V, I_C = 100\text{mA}$	50	–	250	
		$V_{CE} = 1V, I_C = 500\text{mA}$	30	–	–	
		$V_{CE} = 1V, I_C = 1.5A$	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	$V_{BE(on)}$	$I_C = 50\text{mA}, V_C = 1\text{V}$	-	-	1.2	V
Dynamic Characteristics						
Current-Gain - Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 500\text{mA}, f_{test} = 10\text{MHz}$	50	-	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$	-	-	40	pF

