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MPSH17 Silicon NPN Transistor CATV Transistor TO-92 Type Package

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO}	15V
Collector–Base Voltage, V_{CBO}	20V
Emitter–Base Voltage, V_{EBO}	3V
Total Power Dissipation ($T_A = +25^\circ\text{C}$), P_D	350mW
Derate above $+25^\circ\text{C}$	2.81mW/ $^\circ\text{C}$
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–Ambient, R_{thJA}	$+357^\circ\text{C/W}$

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	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	15	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	20	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	3	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 15\text{V}, I_E = 0$	–	–	100	nA
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 5\text{mA}, V_{CE} = 10\text{V}$	25	–	250	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$	–	–	0.5	V
Small–Signal Characteristics						
Current Gain–Bandwidth Product	f_T	$I_C = 5\text{mA}, V_{CE} = 10\text{V}, f = 100\text{MHz}$	800	–	–	MHz
Collector–Base Capacitance	C_{cb}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	0.3	–	0.9	pF
Small–Signal Current Gain	h_{fe}	$I_C = 5\text{mA}, V_{CE} = 10\text{V}, f = 1\text{kHz}$	30	–	–	
Noise Figure	NF	$I_C = 5\text{mA}, V_{CC} = 12\text{V}, R_S = 50\Omega, f = 200\text{MHz}$	–	–	6	dB
Functional Test						
Amplifier Power Gain	G_{pe}	$I_C = 5\text{mA}, V_{CC} = 12\text{V}, R_S = 50\Omega, f = 200\text{MHz}$	–	24	–	dB

