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MPS-U02 (SILICON)

NPN silicon annular amplifier transistors designed for general-purpose amplifier and driver applications. Complement to PNP MPS-U52.



Collector connected to tab

CASE 152

STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	40	Vdc
Collector-Base Voltage	V_{CB}	60	Vdc
Emitter-Base Voltage	V_{EB}	5.0	Vdc
Collector Current — Continuous	I_C	800	mAdc
Total Power Dissipation @ T_A = 25°C Derate above 25°C	P_D	1.0 8.0	Watt mW/°C
Total Power Dissipation @ T_C = 25°C Derate above 25°C	P_D	10 80	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R\theta_{JC}$	12.5	°C/W
Thermal Resistance, Junction to Ambient	$R\theta_{JA}$	125	°C/W

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage (I_C = 1.0 mAdc, I_B = 0)	BV_{CEO}	40	-	Vdc
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	BV_{CBO}	60	-	Vdc
Collector Cutoff Current (V_{CB} = 40 Vdc, I_E = 0)	I_{CBO}	-	100	nAdc
ON CHARACTERISTICS				
DC Current Gain (I_C = 10 mAdc, V_{CE} = 10 Vdc) (I_C = 150 mAdc, V_{CE} = 10 Vdc) (I_C = 500 mAdc, V_{CE} = 10 Vdc)	h_{FE}	 50 50 30	 - 300 -	-
Collector-Emitter Saturation Voltage (I_C = 150 mAdc, I_B = 15 mAdc)	$V_{CE(sat)}$	-	0.4	Vdc
Base-Emitter Saturation Voltage (I_C = 150 mAdc, I_B = 15 mAdc)	$V_{BE(sat)}$	-	1.3	Vdc
DYNAMIC CHARACTERISTICS				
Current-Gain—Bandwidth Product (I_C = 20 mAdc, V_{CE} = 20 Vdc, f = 100 MHz)	f_T	150	-	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz)	C_{ob}	-	10	pF

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Quality Semi-Conductors