

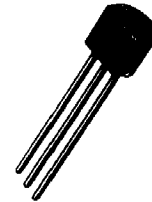
**MPS3826 (SILICON)**  
**MPS3827**

**NPN SILICON ANNULAR TRANSISTORS**

... designed for use in general-purpose amplifier applications.

- Collector-Emitter Breakdown Voltage –  
BVCEO = 45 Vdc (Min) @ IC = 10 mAdc
- High Current-Gain-Bandwidth Product –  
fT = 500 MHz (Typ) @ IC = 10 mAdc
- Low Output Capacitance –  
Cob = 2.2 pF (Typ) @ VCB = 10 Vdc

**NPN SILICON  
AMPLIFIER TRANSISTORS**



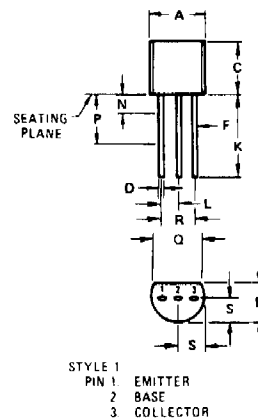
**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	VCEO	45	Vdc
Collector-Base Voltage	VCB	60	Vdc
Emitter-Base Voltage	VEB	4.0	Vdc
Collector Current – Continuous	IC	100	mAdc
Total Power Dissipation @ TA = 25°C Derate above 25°C	PD	350 2.8	mW mW/°C
Total Power Dissipation @ TC = 25°C Derate above 25°C	PD	1.0 8.0	Watt mW/°C
Operating and Storage Junction Temperature Range	TJ, Tstg	-55 to +150	°C

**THERMAL CHARACTERISTICS**

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient (1)	RθJA	357	°C/W
Thermal Resistance, Junction to Case	RθJC	125	°C/W

(1) RθJA is measured with the device soldered into a typical printed circuit board.



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.450	5.200	0.175	0.205
B	3.180	4.190	0.125	0.165
C	4.320	5.330	0.170	0.210
D	0.407	0.533	0.016	0.021
F	0.407	0.482	0.016	0.019
K	12.700	–	0.500	–
L	1.150	1.380	0.045	0.055
N	–	1.270	–	0.050
P	6.350	–	0.250	–
Q	3.430	–	0.135	–
R	2.410	2.870	0.095	0.105
S	2.030	2.670	0.080	0.105

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**MPS3826, MPS3827 (continued)**

**\*ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Breakdown Voltage (1) ( $I_C = 10 \text{ mAdc}$ , $I_B = 0$ )	$BV_{CEO}$	45	—	—	Vdc
Collector-Base Breakdown Voltage ( $I_C = 100 \mu\text{Adc}$ , $I_E = 0$ )	$BV_{CBO}$	60	—	—	Vdc
Emitter-Base Breakdown Voltage ( $I_E = 100 \mu\text{Adc}$ , $I_C = 0$ )	$BV_{EBO}$	4.0	—	—	Vdc
Collector Cutoff Current ( $V_{CB} = 30 \text{ Vdc}$ , $I_E = 0$ ) ( $V_{CB} = 30 \text{ Vdc}$ , $I_E = 0$ , $T_A = 85^\circ\text{C}$ )	$I_{CBO}$	—	—	100 5.0	nAdc $\mu\text{Adc}$
<b>ON CHARACTERISTICS</b>					
DC Current Gain ( $I_C = 10 \text{ mAdc}$ , $V_{CE} = 10 \text{ Vdc}$ )	MPS3826 MPS3827	hFE 40 100	— 175	160 400*	— —
<b>DYNAMIC CHARACTERISTICS</b>					
Current-Gain – Bandwidth Product ( $I_C = 10 \text{ mAdc}$ , $V_{CE} = 10 \text{ Vdc}$ , $f = 100 \text{ MHz}$ )	$f_T$	200	500	800	MHz
Output Capacitance ( $V_{CB} = 10 \text{ Vdc}$ , $I_E = 0$ , $f = 1.0 \text{ MHz}$ )	$C_{ob}$	—	2.2	3.5	pF
Collector-Base Time Constant ( $I_E = 10 \text{ mAdc}$ , $V_{CB} = 10 \text{ Vdc}$ , $f = 31.9 \text{ MHz}$ )	$\tau_b' C_c$	—	—	100	ps

(1) Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .