

# MMCF3798 (SILICON)

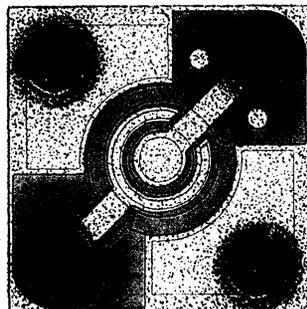
# MMCF3799

## FLIP-CHIP PNP SMALL-SIGNAL AMPLIFIER TRANSISTORS

Flip-Chip – PNP silicon Annular transistor family for low-level low-noise amplifier applications similar to the 2N3798 and 2N3799.

**Primary Electrical Features:**

- High DC Current Gain @  $I_C = 1.0 \text{ mAdc}$ ,  $V_{CE} = 5.0 \text{ Vdc}$  –  
 $h_{FE} = 150-450$  – MMCF3798  
 $= 300-900$  – MMCF3799
- Low Collector-Emitter Saturation Voltage –  
 $V_{CE(sat)} = 0.25 \text{ Vdc (Max)}$  @  $I_C = 1.0 \text{ mAdc}$
- Current-Gain Bandwidth Product –  $f_T = 100 \text{ MHz (Min)}$



4

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	60	Vdc
Collector-Base Voltage	$V_{CB}$	60	Vdc
Emitter-Base Voltage	$V_{EB}$	5.0	Vdc
Collector Current – Continuous	$I_C$	50	mA

MMCF3798, MMCF3799 (continued)

ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Voltage (I <sub>C</sub> = 10 mA <sub>dc</sub> , I <sub>B</sub> = 0)	BV <sub>CEO</sub>	60	—	V <sub>dc</sub>
Collector-Base Breakdown Voltage (I <sub>C</sub> = 10 μA <sub>dc</sub> , I <sub>E</sub> = 0)	BV <sub>CBO</sub>	60	—	V <sub>dc</sub>
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 10 mA <sub>dc</sub> , I <sub>C</sub> = 0)	BV <sub>EBO</sub>	5.0	—	V <sub>dc</sub>
Collector Cutoff Current (V <sub>CB</sub> = 50 V <sub>dc</sub> , I <sub>E</sub> = 0)	I <sub>CBO</sub>	—	10	nA <sub>dc</sub>
Emitter Cutoff Current (V <sub>EB</sub> = 4.0 V <sub>dc</sub> , I <sub>C</sub> = 0)	I <sub>EBO</sub>	—	20	nA <sub>dc</sub>
<b>ON CHARACTERISTICS</b>				
DC Current Gain (I <sub>C</sub> = 0.1 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 V <sub>dc</sub> )	h <sub>FE</sub>	150 250	— —	—
MMCF3798				
MMCF3799				
(I <sub>C</sub> = 1.0 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 V <sub>dc</sub> )				
MMCF3798				
MMCF3799	150 300	450 900		
(I <sub>C</sub> = 10 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 V <sub>dc</sub> )		125 250	— —	
MMCF3798				
MMCF3799				
Collector-Emitter Saturation Voltage (1) (I <sub>C</sub> = 1.0 mA <sub>dc</sub> , I <sub>B</sub> = 0.1 mA <sub>dc</sub> )	V <sub>CE(sat)</sub>	—	0.25	V <sub>dc</sub>
Base-Emitter On Voltage (I <sub>C</sub> = 1.0 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 V <sub>dc</sub> )	V <sub>BE(on)</sub>	—	0.7	V <sub>dc</sub>
<b>DYNAMIC CHARACTERISTICS</b>				
Current-Gain-Bandwidth Product (I <sub>C</sub> = 1.0 mA <sub>dc</sub> , V <sub>CE</sub> = 5.0 V <sub>dc</sub> , f = 100 MHz)	f <sub>T</sub>	100	—	MHz
Output Capacitance (V <sub>CB</sub> = 5.0 V <sub>dc</sub> , I <sub>E</sub> = 0, f = 100 kHz)	C <sub>ob</sub>	—	6.0	pF

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%