

# MMBT6428,29

CASE 318-02/03, STYLE 6  
SOT-23 (TO-236AA/AB)

AMPLIFIER TRANSISTOR

NPN SILICON

## MAXIMUM RATINGS

Rating	Symbol	Value		Unit
		MMBT6428	MMBT6429	
Collector-Emitter Voltage	V <sub>CEO</sub>	50	45	Vdc
Collector-Base Voltage	V <sub>CBO</sub>	60	55	Vdc
Emitter-Base Voltage	V <sub>EBO</sub>	6.0		Vdc
Collector Current — Continuous	I <sub>C</sub>	200		mAdc

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Total Device Dissipation, T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	350 2.8	mW mW/°C
Storage Temperature	T <sub>stg</sub>	150	°C
*Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	357	°C/W

Refer to MPSA18 for graphs.

\*Package mounted on 99.5% alumina 10 x 8 x 0.6 mm.

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

Characteristic	Symbol	Min	Max	Unit
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### OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (I <sub>C</sub> = 1.0 mAdc, I <sub>B</sub> = 0) (I <sub>C</sub> = 1.0 mAdc, I <sub>B</sub> = 0)	MMBT6428 MMBT6429	V <sub>(BR)CEO</sub>	50 45	—	Vdc
Collector-Base Breakdown Voltage (I <sub>C</sub> = 0.1 mAdc, I <sub>E</sub> = 0) (I <sub>C</sub> = 0.1 mAdc, I <sub>E</sub> = 0)	MMBT6428 MMBT6429	V <sub>(BR)CBO</sub>	60 55	—	Vdc
Collector Cutoff Current (V <sub>CE</sub> = 30 Vdc)		I <sub>CEO</sub>	—	0.1	μAdc
Collector Cutoff Current (V <sub>CB</sub> = 30 Vdc, I <sub>E</sub> = 0)		I <sub>CBO</sub>	—	0.01	μAdc
Emitter Cutoff Current (V <sub>EB</sub> = 5.0 Vdc, I <sub>C</sub> = 0)		I <sub>EBO</sub>	—	0.01	μAdc

### ON CHARACTERISTICS

DC Current Gain (I <sub>C</sub> = 0.01 mAdc, V <sub>CE</sub> = 5.0 Vdc)	MMBT6428 MMBT6429	h <sub>FE</sub>	250 500	—	—
(I <sub>C</sub> = 0.1 mAdc, V <sub>CE</sub> = 5.0 Vdc)	MMBT6428 MMBT6429		250 500	650 1250	
(I <sub>C</sub> = 1.0 mAdc, V <sub>CE</sub> = 5.0 Vdc)	MMBT6428 MMBT6429		250 500	—	
(I <sub>C</sub> = 10 mAdc, V <sub>CE</sub> = 5.0 Vdc)	MMBT6428 MMBT6429		250 500	—	
Collector-Emitter Saturation Voltage (I <sub>C</sub> = 10 mAdc, I <sub>B</sub> = 0.5 mAdc) (I <sub>C</sub> = 100 mAdc, I <sub>B</sub> = 5.0 mAdc)		V <sub>CE(sat)</sub>	—	0.2 0.6	Vdc
Base-Emitter On Voltage (I <sub>C</sub> = 1.0 mAdc, V <sub>CE</sub> = 5.0 Vdc)		V <sub>BE(on)</sub>	0.56	0.66	Vdc

### SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product (I <sub>C</sub> = 1.0 mAdc, V <sub>CE</sub> = 5.0 Vdc, f = 100 MHz)		f <sub>T</sub>	100	700	MHz
Output Capacitance (V <sub>CB</sub> = 10 Vdc, I <sub>E</sub> = 0, f = 1.0 MHz)		C <sub>obo</sub>	—	3.0	pF
Input Capacitance (V <sub>EB</sub> = 0.5 Vdc, I <sub>C</sub> = 0, f = 1.0 MHz)		C <sub>ibo</sub>	—	8.0	pF