

MMBTA13,14

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

DARLINGTON AMPLIFIER
TRANSISTOR

NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CES}	30	Vdc
Collector-Base Voltage	V _{CBO}	30	Vdc
Emitter-Base Voltage	V _{EBO}	10	Vdc
Collector Current — Continuous	I _C	300	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Total Device Dissipation, T _A = 25°C Derate above 25°C	P _D	350 2.8	mW mW/°C
Storage Temperature	T _{stg}	150	°C
*Thermal Resistance Junction to Ambient	R _{θJA}	357	°C/W

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

Refer to 2N6426 for graphs.

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (I _C = 100 μAdc, I _B = 0)	V _{(BR)CES}	30	—	Vdc
Collector Cutoff Current (V _{CB} = 30 Vdc, I _E = 0)	I _{CBO}	—	100	nAdc
Emitter Cutoff Current (V _{BE} = 10 Vdc, I _C = 0)	I _{EBO}	—	100	nAdc

ON CHARACTERISTICS(1)

DC Current Gain (I _C = 10 mAdc, V _{CE} = 5.0 Vdc)	MMBTA13 MMBTA14	h _{FE}	5000 10,000	—	—
(I _C = 100 mAdc, V _{CE} = 5.0 Vdc)	MMBTA13 MMBTA14		10,000 20,000	—	—
Collector-Emitter Saturation Voltage (I _C = 100 mAdc, I _B = 0.1 mAdc)		V _{CE(sat)}	—	1.5	Vdc
Base-Emitter On Voltage (I _C = 100 mAdc, V _{CE} = 5.0 Vdc)		V _{BE}	—	2.0	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product(2) (I _C = 10 mAdc, V _{CE} = 5.0 Vdc, f = 100 MHz)		f _T	125	—	MHz
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(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

(2) f_T = |h_{fe}| • f_{test}.