

PNP SILICON EPITAXIAL TRANSISTOR FOR LOW-FREQUENCY POWER AMPLIFIERS AND MID-SPEED SWITCHING

The 2SA1129 is a mold power transistor developed for mid-speed switching, and is ideal for use as a ramp driver.

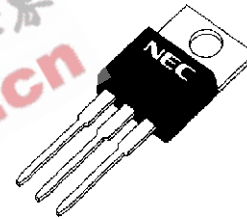
ORDERING INFORMATION

Part No.	Package
2SA1129	TO-220AB

FEATURES

- Large current capacity with small package: $I_{C(DC)} = -7.0$ A
- Low collector saturation voltage:
 $V_{CE(sat)} = -0.3$ V MAX. @ $I_C = -3.0$ A, $I_B = -0.1$ A
- Complementary transistor: 2SC2654

(TO-220AB)



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	Ratings	Unit
Collector to base voltage	V_{CBO}		-30	V
Collector to emitter voltage	V_{CEO}		-30	V
Emitter to base voltage	V_{EBO}		-7.0	V
Collector current (DC)	$I_{C(DC)}$		-7.0	A
Collector current (pulse)	$I_{C(pulse)}$	$PW \leq 300 \mu\text{s}$, duty cycle $\leq 10\%$	-15	A
Base current (DC)	$I_{B(DC)}$		-3.5	A
Total power dissipation	P_T	$T_C = 25^\circ\text{C}$	40	W
		$T_A = 25^\circ\text{C}$	1.5	W
Junction temperature	T_J		150	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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ELECTRICAL CHARACTERISTICS (T_A = 25°C)

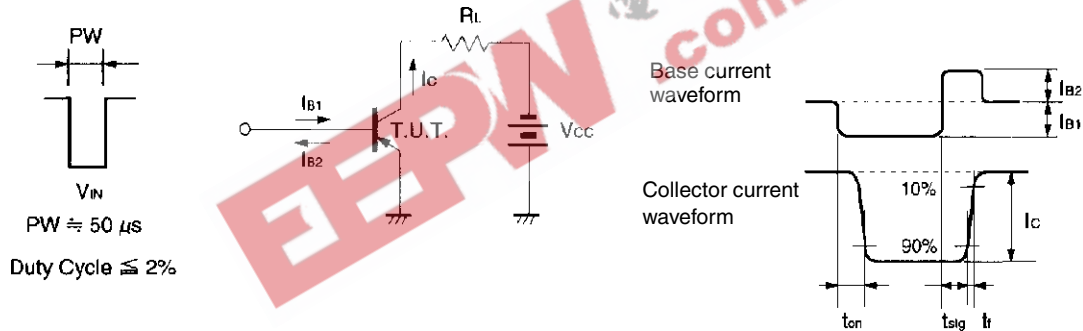
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I _{CBO}	V _{CB} = -30 V, I _E = 0 A			-10	μA
Emitter cutoff current	I _{EBO}	V _{EB} = -5.0 V, I _C = 0 A			-10	μA
DC current gain	h _{FE1}	V _{CE} = -1.0 V, I _C = -3.0 A ^{Note}	40		200	
DC current gain	h _{FE2}	V _{CE} = -1.0 V, I _C = -5.0 A ^{Note}	20			
Collector saturation voltage	V _{CE(sat)1}	I _C = -3.0 A, I _B = -0.1 A ^{Note}			-0.3	V
Collector saturation voltage	V _{CE(sat)2}	I _C = -5.0 A, I _B = -0.5 A ^{Note}			-0.6	V
Base saturation voltage	V _{BE(sat)1}	I _C = -3.0 A, I _B = -0.1 A ^{Note}			-1.5	V
Base saturation voltage	V _{BE(sat)2}	I _C = -5.0 A, I _B = -0.5 A ^{Note}			-2.0	V
Turn-on time	t _{on}	I _C = -5.0 A, R _L = 4.0 Ω, I _{B1} = -I _{B2} = -0.5 A, V _{CC} ≅ -20 V PW = 50 μs, duty cycle = 2%			1.0	μs
Storage time	t _{stg}				2.5	μs
Fall time	t _f				1.0	μs

Note Pulse test PW ≤ 350 μs, duty cycle ≤ 2%

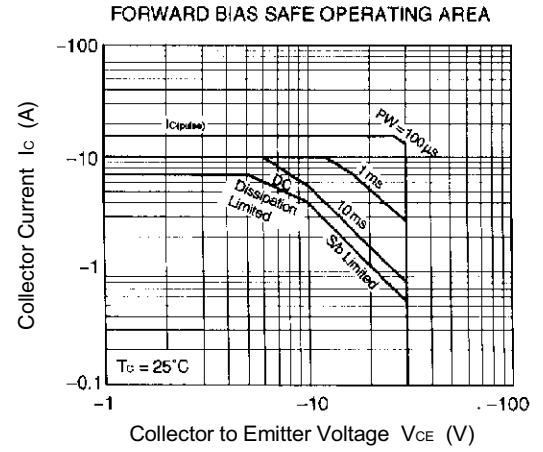
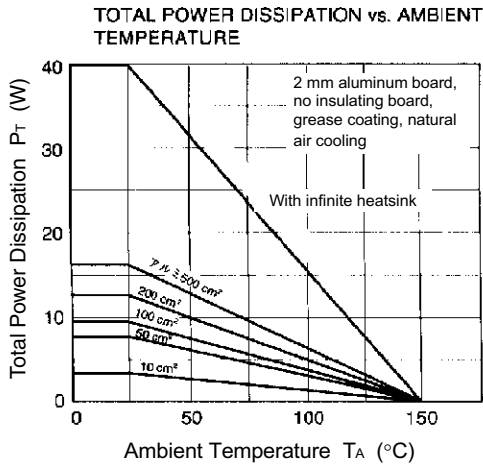
h_{FE} CLASSIFICATION

Marking	M	L	K
h _{FE1}	40 to 80	60 to 120	100 to 200

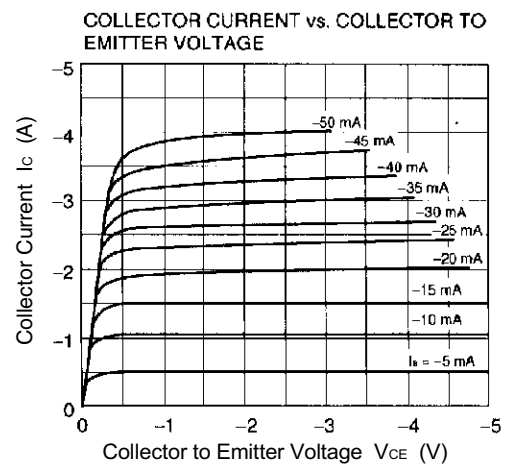
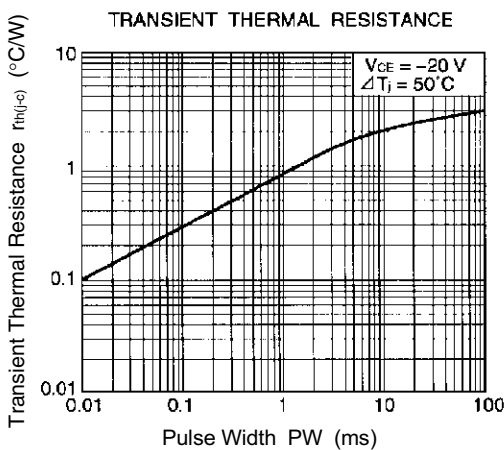
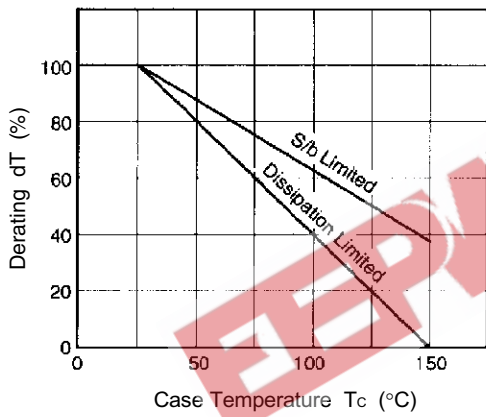
SWITCHING TIME (t_{on}, t_{stg}, t_f) TEST CIRCUIT

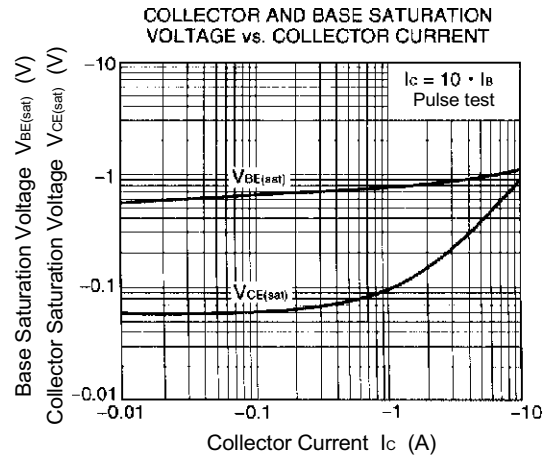
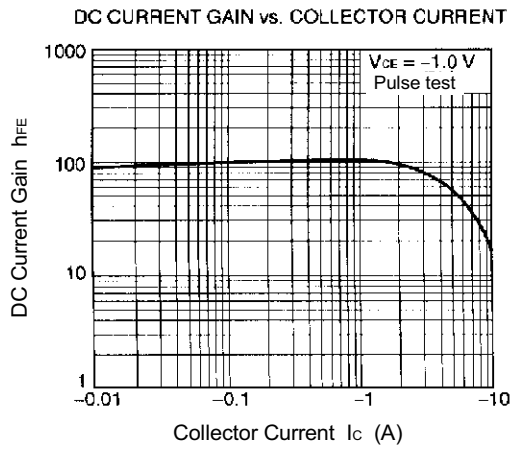


TYPICAL CHARACTERISTICS (T_A = 25°C)



DERATING CURVE OF SAFE OPERATING AREA

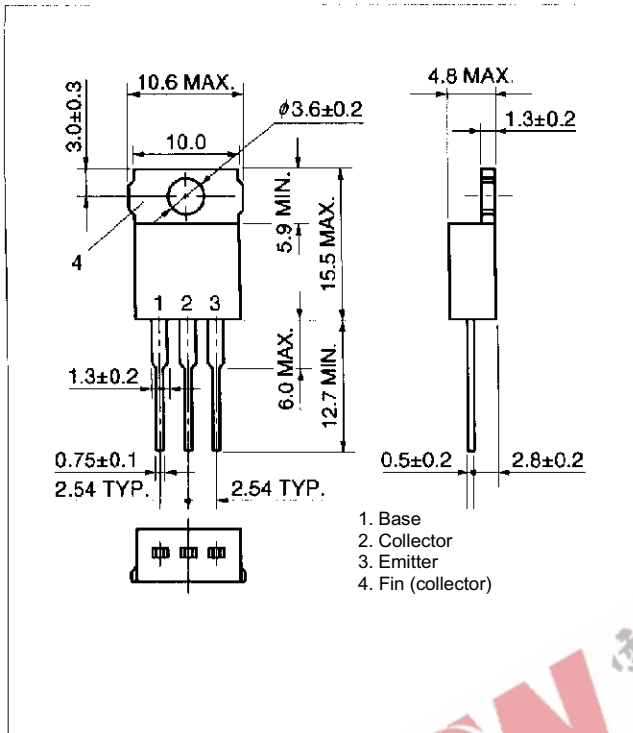




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PACKAGE DRAWING (UNIT: mm)

TO-220AB (MP-25)



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