

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

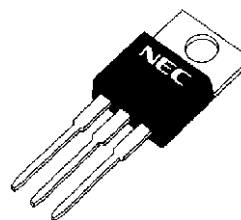
## FEATURES

- 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

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)	$I_{C(pulse)}$	$PW \leq 300 \mu s$ , 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	$^\circ\text{C}$

(TO-220AB)



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**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)**

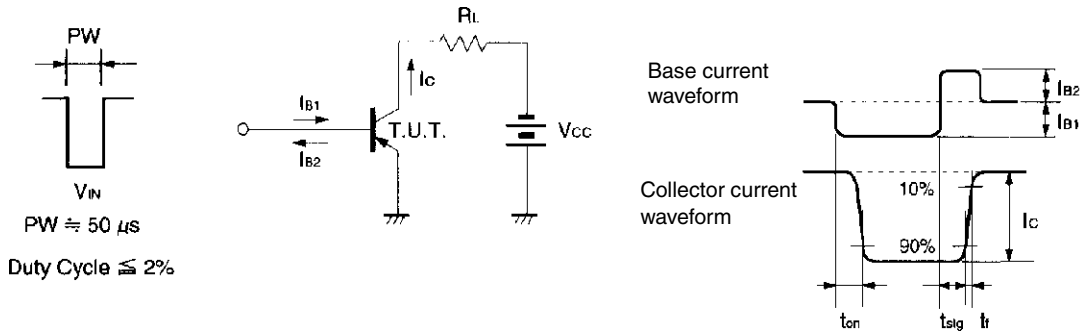
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I <sub>CB0</sub>	V <sub>CB</sub> = -30 V, I <sub>E</sub> = 0 A			-10	μA
Emitter cutoff current	I <sub>EB0</sub>	V <sub>EB</sub> = -5.0 V, I <sub>C</sub> = 0 A			-10	μA
DC current gain	h <sub>FE1</sub>	V <sub>CE</sub> = -1.0 V, I <sub>C</sub> = -3.0 A <sup>Note</sup>	40		200	
DC current gain	h <sub>FE2</sub>	V <sub>CE</sub> = -1.0 V, I <sub>C</sub> = -5.0 A <sup>Note</sup>	20			
Collector saturation voltage	V <sub>CE(sat)1</sub>	I <sub>C</sub> = -3.0 A, I <sub>B</sub> = -0.1 A <sup>Note</sup>			-0.3	V
Collector saturation voltage	V <sub>CE(sat)2</sub>	I <sub>C</sub> = -5.0 A, I <sub>B</sub> = -0.5 A <sup>Note</sup>			-0.6	V
Base saturation voltage	V <sub>BE(sat)1</sub>	I <sub>C</sub> = -3.0 A, I <sub>B</sub> = -0.1 A <sup>Note</sup>			-1.5	V
Base saturation voltage	V <sub>BE(sat)2</sub>	I <sub>C</sub> = -5.0 A, I <sub>B</sub> = -0.5 A <sup>Note</sup>			-2.0	V
Turn-on time	t <sub>on</sub>	I <sub>C</sub> = -5.0 A, R <sub>L</sub> = 4.0 Ω,			1.0	μs
Storage time	t <sub>stg</sub>	I <sub>B1</sub> = -I <sub>B2</sub> = -0.5 A, V <sub>CC</sub> ≅ -20 V			2.5	μs
Fall time	t <sub>f</sub>	PW = 50 μs, duty cycle = 2%			1.0	μs

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

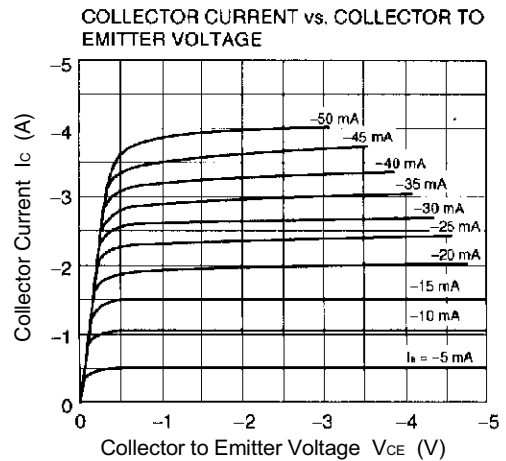
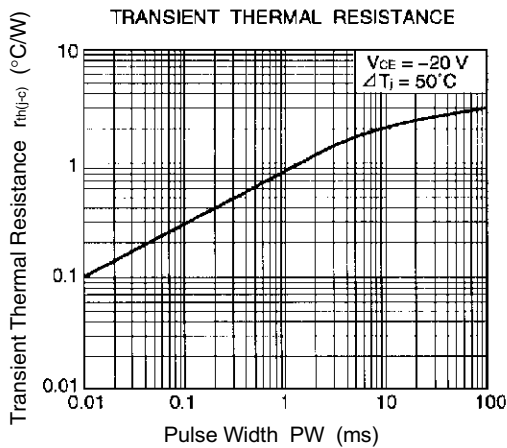
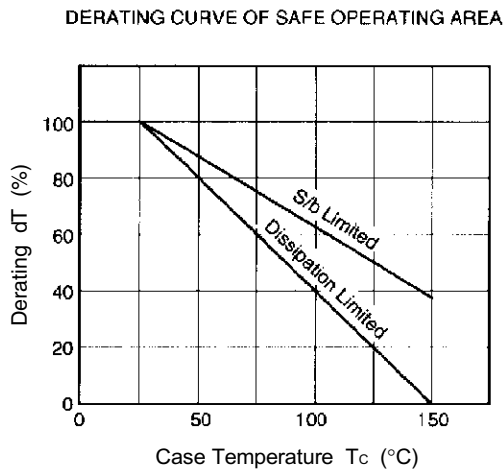
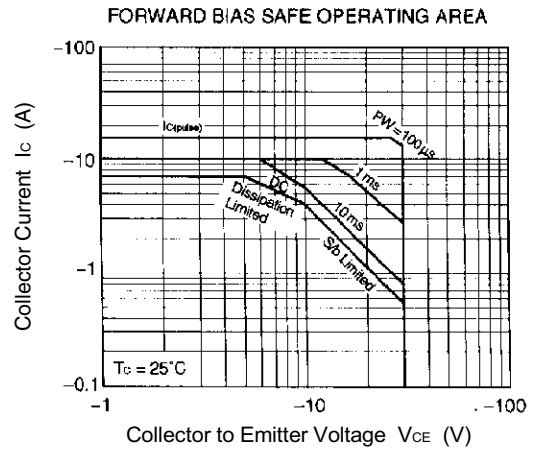
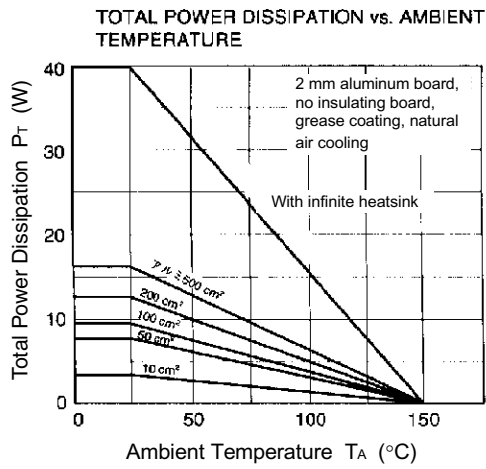
**h<sub>FE</sub> CLASSIFICATION**

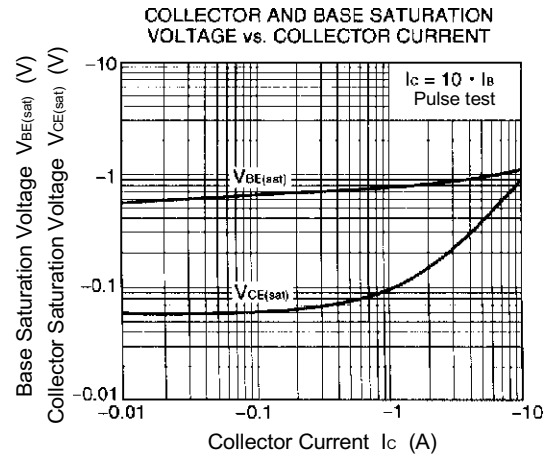
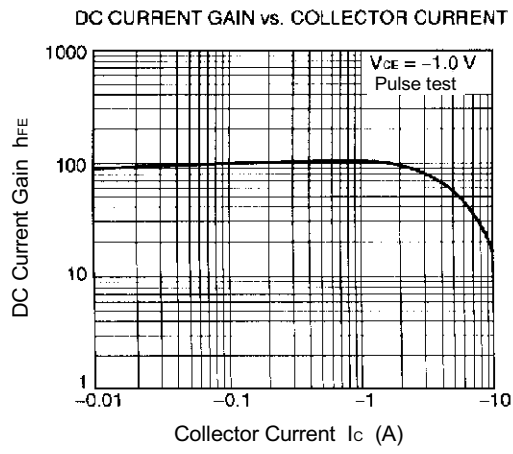
Marking	M	L	K
h <sub>FE1</sub>	40 to 80	60 to 120	100 to 200

**SWITCHING TIME (t<sub>on</sub>, t<sub>stg</sub>, t<sub>f</sub>) TEST CIRCUIT**



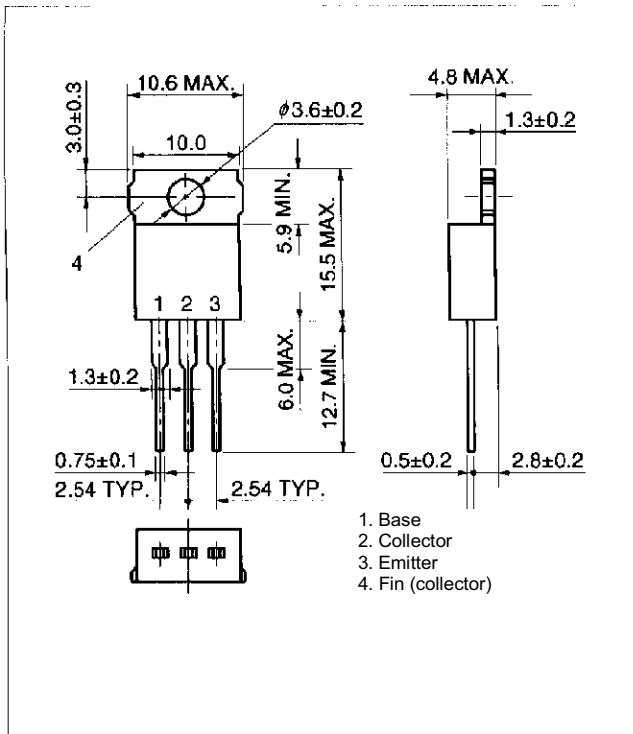
TYPICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )





PACKAGE DRAWING (UNIT: mm)

TO-220AB (MP-25)



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