DATA SHEET



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

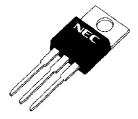
NEC

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

ABSOLUTE MAXIMUM RATINGS (TA = 25°C)

Parameter	Symbol	Conditions	Ratings	Unit
Collector to base voltage	Vсво		-30	V
Collector to emitter voltage	VCEO		-30	V
Emitter to base voltage	Vebo		-7.0	V
Collector current (DC)	IC(DC)		-7.0	А
Collector current (pulse)	C(pulse)	PW ≤ 300 <i>µ</i> s,	-15	Α
		duty cycle $\leq 10\%$		
Base current (DC)	IB(DC)		-3.5	А
Total power dissipation	Р⊤	$Tc = 25^{\circ}C$	40	V
		$T_A = 25^{\circ}C$	1.5	W
Junction temperature	Tj		150	°C
Storage temperature	Tstg		-55 to +150	°C

(TO-220AB)



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ELECTRICAL CHARACTERISTICS (TA = 25°C)

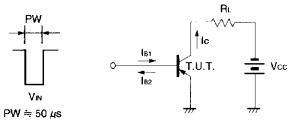
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	Ісво	$V_{CB} = -30 \text{ V}, \text{ I}_{E} = 0 \text{ A}$			-10	μA
Emitter cutoff current	Іево	$V_{EB} = -5.0 \text{ V}, \text{ Ic} = 0 \text{ A}$			-10	μA
DC current gain	h _{FE1}	$V_{CE} = -1.0 \text{ V}, \text{ Ic} = -3.0 \text{ A}^{Note}$	40		200	
DC current gain	hFE2	$V_{CE} = -1.0 \text{ V}, \text{ Ic} = -5.0 \text{ A}^{Note}$	20			
Collector saturation voltage	VCE(sat)1	$I_{C} = -3.0 \text{ A}, I_{B} = -0.1 \text{ A}^{Note}$			-0.3	V
Collector saturation voltage	VCE(sat)2	$I_{C} = -5.0 \text{ A}, I_{B} = -0.5 \text{ A}^{Note}$			-0.6	V
Base saturation voltage	VBE(sat)1	$I_{C} = -3.0 \text{ A}, I_{B} = -0.1 \text{ A}^{Note}$			-1.5	V
Base saturation voltage	VBE(sat)2	$I_{C} = -5.0 \text{ A}, I_{B} = -0.5 \text{ A}^{Note}$			-2.0	V
Turn-on time	ton	Ic = −5.0 A, R∟ = 4.0 Ω,			1.0	μs
Storage time	tstg	$I_{B1} = -I_{B2} = -0.5 \text{ A}, \text{ Vcc} \cong -20 \text{ V}$			2.5	μs
Fall time	tr	PW = 50 μ s, duty cycle = 2%			1.0	μs

Note Pulse test PW \leq 350 μ s, duty cycle \leq 2%

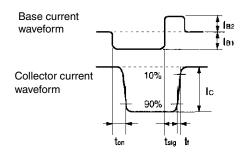
hFE CLASSIFICATION

Marking	М	L	К
hfe1	40 to 80	60 to 120	100 to 200

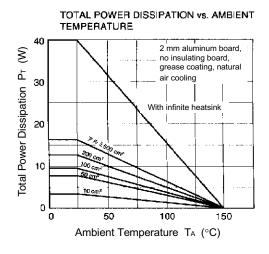
SWITCHING TIME (ton, tstg, tf) TEST CIRCUIT



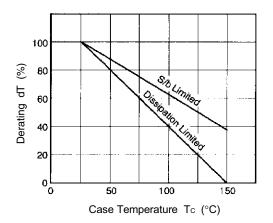
Duty Cycle $\leqq 2\%$

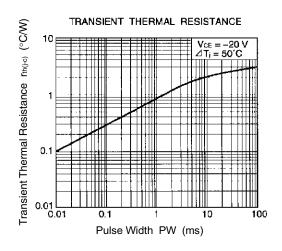


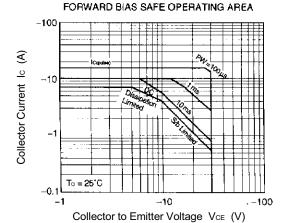


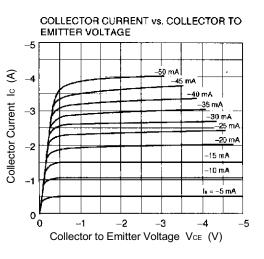




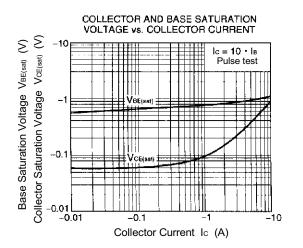






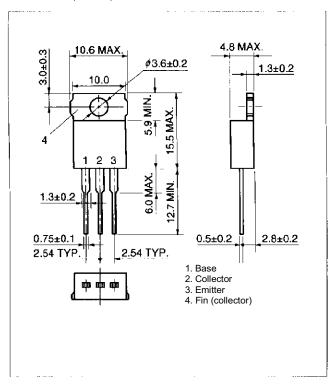


DC CURRENT GAIN vs. COLLECTOR CURRENT 1000 Vce = -1.0 V Pulse test H DC Current Gain hFE 100 10 1 L --0.01 -0.1 -10 -1 Collector Current Ic (A)



PACKAGE DRAWING (UNIT: mm)

TO-220AB (MP-25)



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