

PMST5088,115 Datasheet



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DiGi Electronics Part Number	PMST5088,115-DG
Manufacturer	Nexperia USA Inc.
Manufacturer Product Number	PMST5088,115
Description	TRANS NPN 30V 0.1A SOT323
Detailed Description	Bipolar (BJT) Transistor NPN 30 V 100 mA 100MHz 200 mW Surface Mount SOT-323



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Purchase and inquiry

Manufacturer Product Number:

PMST5088,115

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

30 V

Current - Collector Cutoff (Max):

50nA (ICBO)

Power - Max:

200 mW

Operating Temperature:

150°C (TJ)

Qualification:

AEC-Q101

Package / Case:

SC-70, SOT-323

Base Product Number:

PMST5088

Manufacturer:

Nexperia USA Inc.

Product Status:

Active

Current - Collector (Ic) (Max):

100 mA

Vce Saturation (Max) @ Ib, Ic:

500mV @ 1mA, 10mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

300 @ 100µA, 5V

Frequency - Transition:

100MHz

Grade:

Automotive

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-323

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

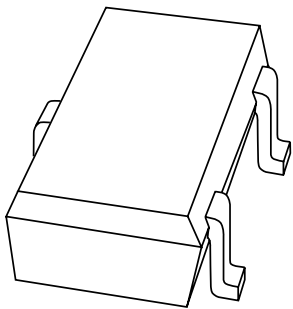
Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

DATA SHEET



PMST5088; PMST5089 NPN general purpose transistors

Product data sheet
Supersedes data of 1997 May 22

1999 Apr 22

NPN general purpose transistors

PMST5088; PMST5089

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 30 V).

APPLICATIONS

- Low-noise input stages in audio equipment.

DESCRIPTION

NPN transistor in a SC-70; SOT323 plastic package.

MARKING

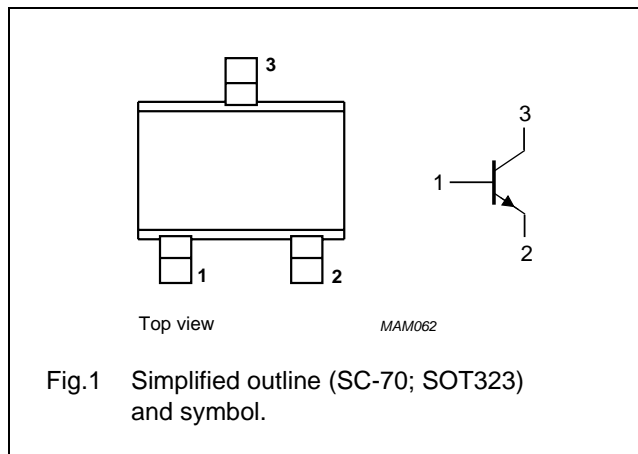
TYPE NUMBER	MARKING CODE ⁽¹⁾
PMST5088	*1Q
PMST5089	*1R

Note

- * = - : Made in Hong Kong.
* = t : Made in Malaysia.

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter			
	PMST5088		–	35	V
	PMST5089		–	30	V
V_{CEO}	collector-emitter voltage	open base			
	PMST5088		–	30	V
	PMST5089		–	25	V
V_{EBO}	emitter-base voltage	open collector	–	4.5	V
I_C	collector current (DC)		–	100	mA
I_{CM}	peak collector current		–	200	mA
I_{BM}	peak base current		–	100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	–	200	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

1. Transistor mounted on an FR4 printed-circuit board.

NPN general purpose transistors

PMST5088; PMST5089

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	625	K/W

Note

1. Transistor mounted on an FR4 printed-circuit board.

CHARACTERISTICS

$T_{amb} = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = 20\text{ V}$	–	50	nA
		$I_E = 0; V_{CB} = 20\text{ V}; T_j = 150\text{ °C}$	–	10	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 3\text{ V}$	–	50	nA
		$I_C = 0; V_{EB} = 4.5\text{ V}$	–	100	nA
h_{FE}	DC current gain PMST5088	$V_{CE} = 5\text{ V}$ $I_C = 0.1\text{ mA}$	300	900	
		$I_C = 1\text{ mA}$	350	–	
		$I_C = 10\text{ mA}$	300	–	
	DC current gain PMST5089	$V_{CE} = 5\text{ V}$ $I_C = 0.1\text{ mA}$	400	1200	
$I_C = 1\text{ mA}$		450	–		
$I_C = 10\text{ mA}$		400	–		
V_{CEsat}	collector-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 1\text{ mA}$	–	500	mV
V_{BE}	base-emitter voltage	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	–	800	mV
C_c	collector capacitance	$I_E = I_C = 0; V_{CB} = 5\text{ V}; f = 1\text{ MHz}$	–	4	pF
C_e	emitter capacitance	$I_C = I_E = 0; V_{EB} = 0.5\text{ V}; f = 1\text{ MHz}$	–	12	pF
f_T	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	–	MHz
F	noise figure PMST5088 PMST5089	$I_C = 100\text{ }\mu\text{A}; V_{CE} = 5\text{ V}; R_S = 1\text{ k}\Omega$ $f = 10\text{ Hz to }15.7\text{ kHz}$	–	3	dB
			–	2	dB

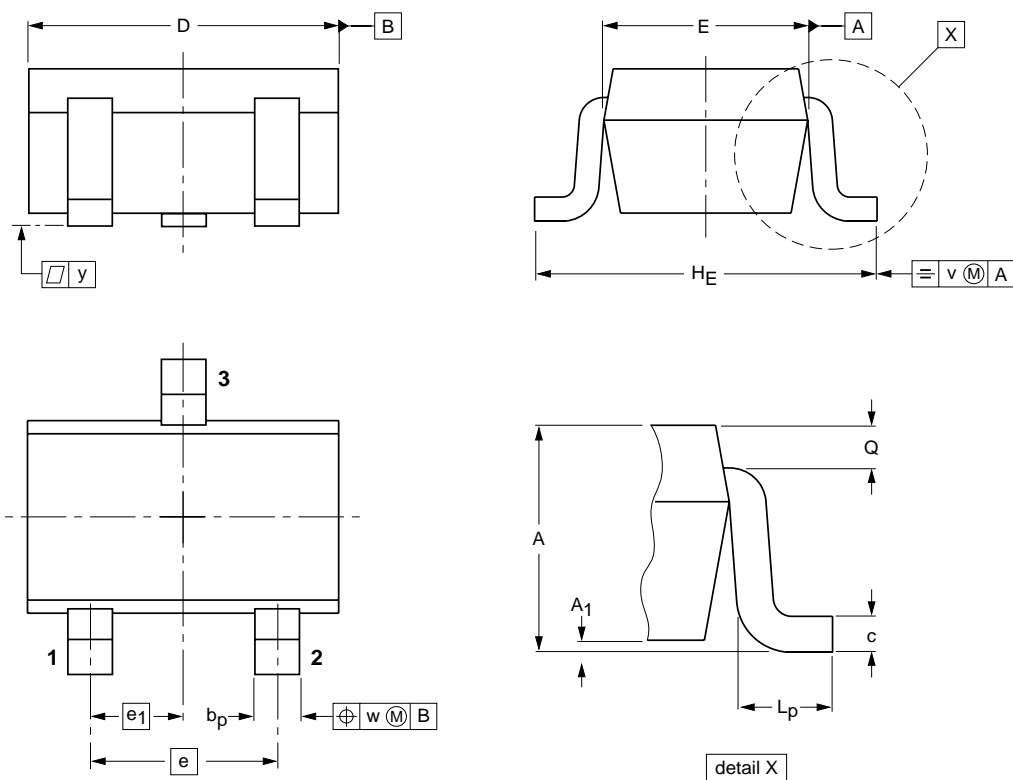
NPN general purpose transistors

PMST5088; PMST5089

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT323			SC-70			97-02-28

NPN general purpose transistors

PMST5088; PMST5089

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

Notes

1. Please consult the most recently issued document before initiating or completing a design.
2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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