PMBT2369,215 Datasheet

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DiGi Electronics Part Number	PMBT2369,215-DG
Manufacturer	Nexperia USA Inc.
Manufacturer Product Number	PMBT2369,215
Description	TRANS NPN 15V 0.2A TO236AB
Detailed Description	Bipolar (BJT) Transistor NPN 15 V 200 mA 500MHz 250 mW Surface Mount TO-236AB

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RFQ Email: Info@DiGi-Electronics.com

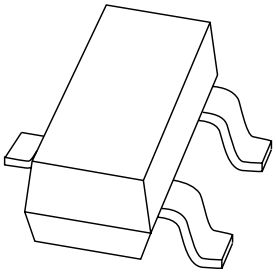
Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
PMBT2369,215	Nexperia USA Inc.
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
NPN	200 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
15 V	250mV @ 1mA, 10mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
400nA (ICBO)	40 @ 10mA, 1V
Power - Max:	Frequency - Transition:
250 mW	500MHz
Operating Temperature:	Grade:
150°C (TJ)	Automotive
Qualification:	Mounting Type:
AEC-Q101	Surface Mount
Package / Case:	Supplier Device Package:
TO-236-3, SC-59, SOT-23-3	TO-236AB
Base Product Number:	
PMBT2369	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

DATA SHEET



PMBT2369
NPN switching transistor

Product data sheet
Supersedes data of 1999 Apr 27

2004 Jan 22

NPN switching transistor PMBT2369

FEATURES

- Low current (max. 200 mA)
- Low voltage (max. 15 V).

APPLICATIONS

- High-speed switching, especially in portable equipment.

DESCRIPTION

NPN switching transistor in a SOT23 plastic package.

MARKING

TYPE NUMBER	MARKING CODE(1)
PMBT2369	*1J

Note

1. * = p : Made in Hong Kong.
   * = t : Made in Malaysia.
   * = W : Made in China.

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

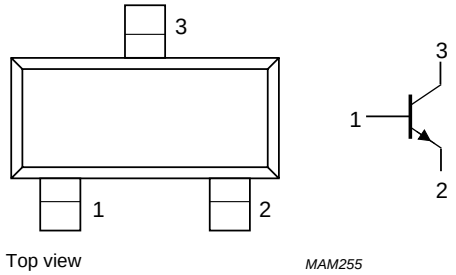


Fig.1 Simplified outline (SOT23) and symbol.

ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
PMBT2369	–	plastic surface mounted package; 3 leads	SOT23

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	40	V
V_{CEO}	collector-emitter voltage	open base	–	15	V
V_{EBO}	emitter-base voltage	open collector	–	5	V
I_C	collector current (DC)		–	200	mA
I_{CM}	peak collector current		–	300	mA
I_{BM}	peak base current		–	100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C; note 1	–	250	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.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	note 1	500	K/W

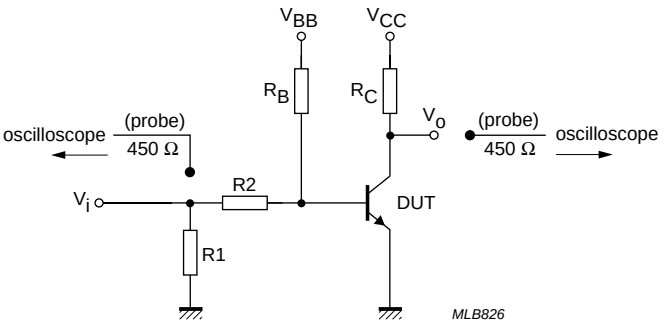
Note

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

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = 20 V	–	400	nA
		I_E = 0; V_{CB} = 20 V; T_j = 125 °C	–	30	μA
I_{EBO}	emitter cut-off current	I_C = 0; V_{EB} = 4 V	–	100	nA
h_{FE}	DC current gain	I_C = 10 mA; V_{CE} = 1 V	40	120	
		I_C = 10 mA; V_{CE} = 1 V; T_{amb} = −55 °C	20	–	
		I_C = 100 mA; V_{CE} = 2 V	20	–	
V_{CEsat}	collector-emitter saturation voltage	I_C = 10 mA; I_B = 1 mA	–	250	mV
V_{BEsat}	base-emitter saturation voltage	I_C = 10 mA; I_B = 1 mA	700	850	mV
C_c	collector capacitance	I_E = I_e = 0; V_{CB} = 5 V; f = 1 MHz	–	4	pF
f_T	transition frequency	I_C = 10 mA; V_{CE} = 10 V; f = 100 MHz	500	–	MHz
Switching times (between 10% and 90% levels); (see Fig.2)					
t_{on}	turn-on time	I_{Con} = 10 mA; I_{Bon} = 3 mA; I_{Boff} = −1.5 mA	–	10	ns
t_d	delay time		–	4	ns
t_r	rise time		–	6	ns
t_{off}	turn-off time		–	20	ns
t_s	storage time		–	10	ns
t_f	fall time		–	10	ns

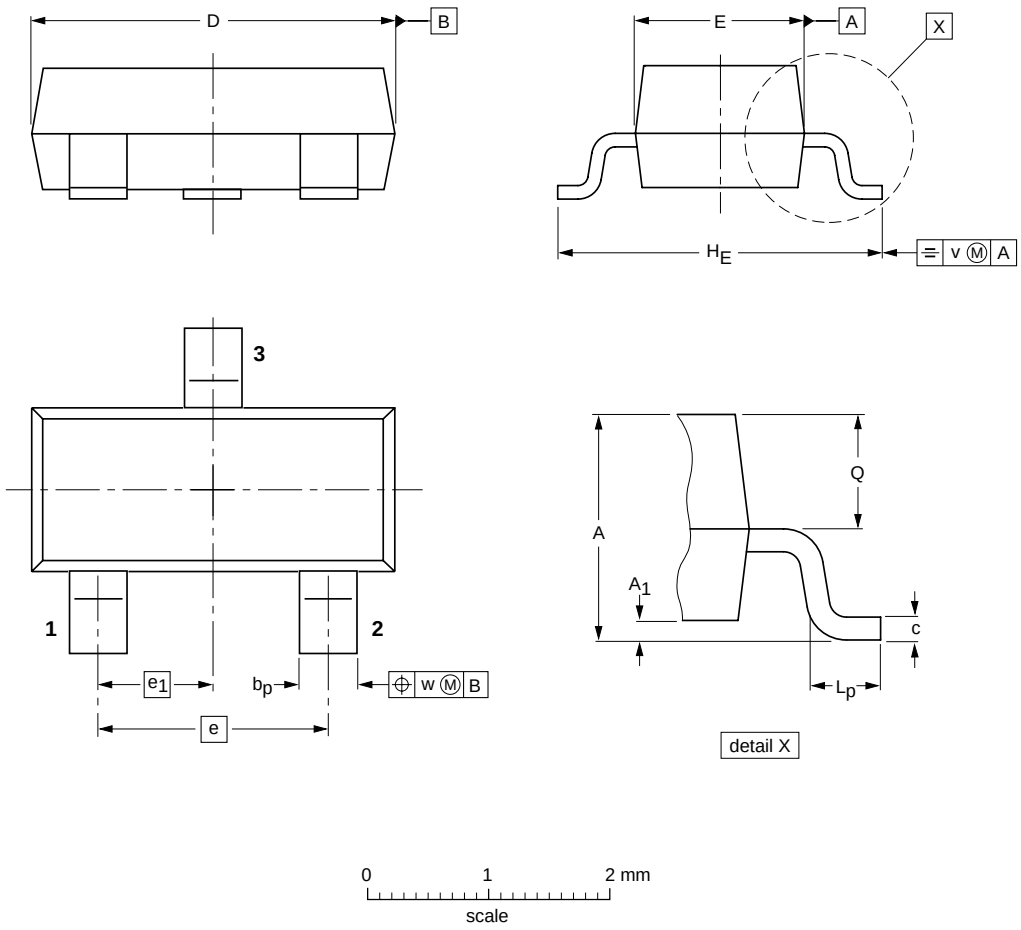


V_i = 0.5 to 4.2 V; T = 500 μs; t_p = 10 μs; $t_r = t_f \leq 3$ ns.
R1 = 56 Ω; R2 = 1 kΩ; R_B = 1 kΩ; R_C = 270 Ω.
V_{BB} = 0.2 V; V_{CC} = 2.7 V.
Oscilloscope input impedance Z_i = 50 Ω.

Fig.2 Test circuit for switching times.

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads **SOT23**



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 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT23		TO-236AB				~~04-11-04~~ 06-03-16

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

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NXP Semiconductors

Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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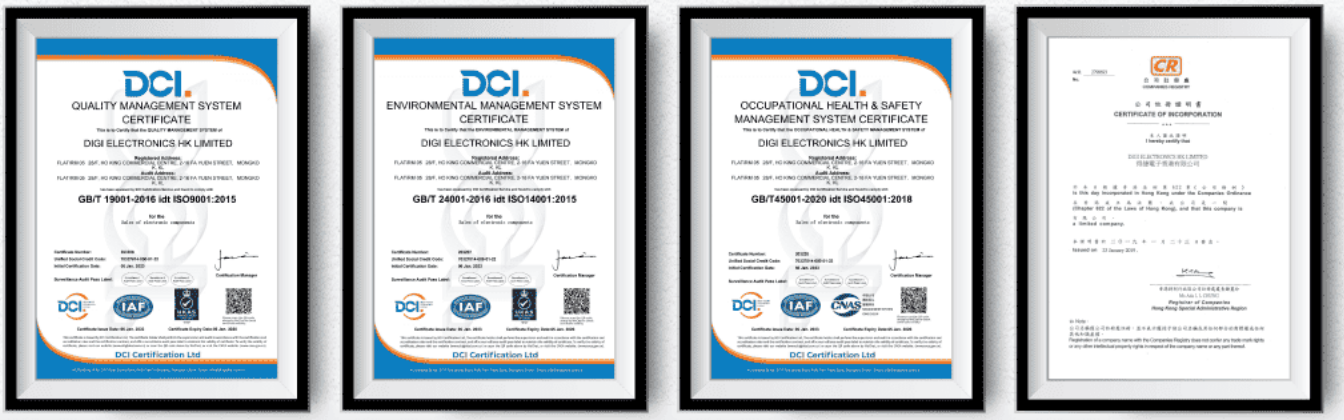

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