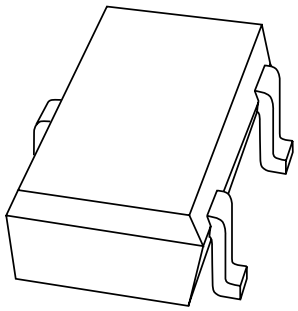
DATA SHEET



PMSTA42; PMSTA43
NPN high-voltage transistors

Product specification
Supersedes data of 1997 Jun 19

1999 May 21

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NPN high-voltage transistors PMSTA42; PMSTA43

FEATURES

- High current (max. 500 mA)
- High voltage (max. 200 V).

APPLICATIONS

- High-voltage switching in telephony applications.

DESCRIPTION

NPN high-voltage transistor in a SOT323 plastic package.
PNP complements: PMSTA92 and PMSTA93.

MARKING

TYPE NUMBER	MARKING CODE(1)
PMSTA42	∗1D
PMSTA43	∗1E

Note

1. ∗ = - : Made in Hong Kong.
   ∗ = t : Made in Malaysia.

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

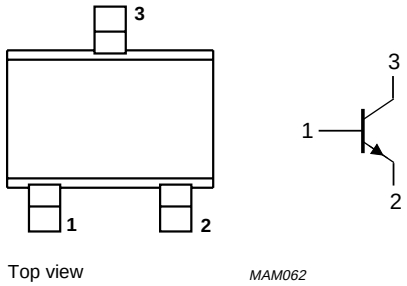


Fig.1 Simplified outline (SOT323) and symbol.

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			
	PMSTA42		–	300	V
	PMSTA43		–	200	V
V_{CEO}	collector-emitter voltage	open base			
	PMSTA42		–	300	V
	PMSTA43		–	200	V
V_{EBO}	emitter-base voltage	open collector	–	6	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	$T_{amb} \leq 25$ °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.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	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 °C unless otherwise specified.

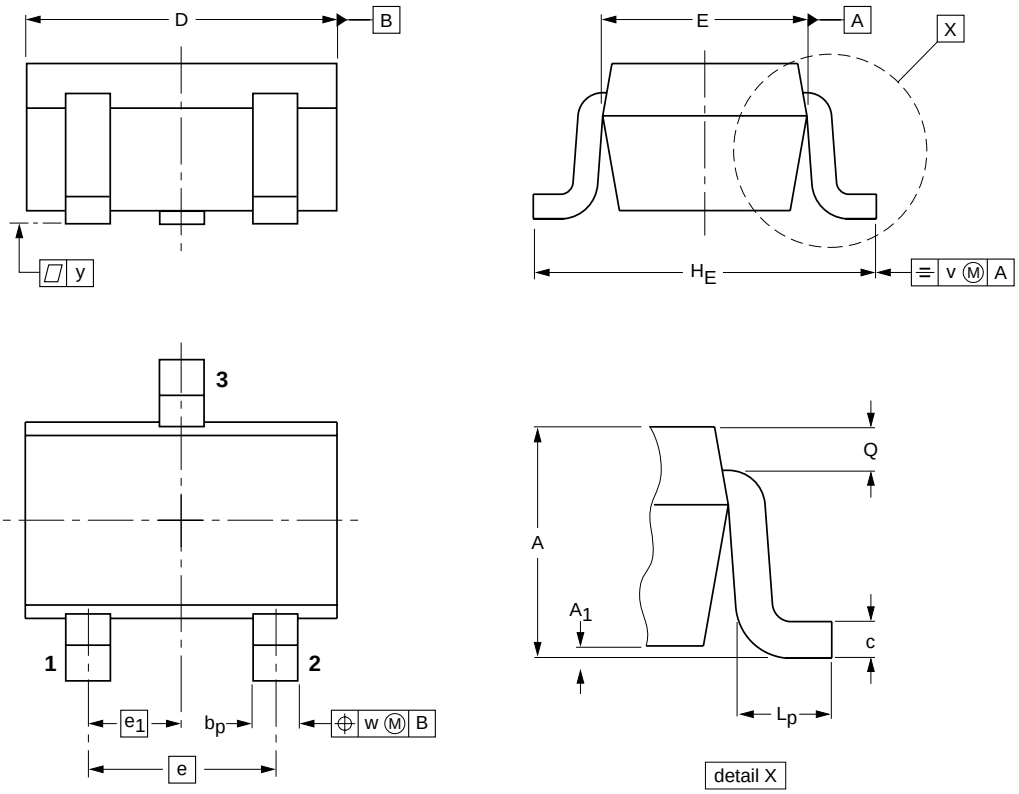
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current				
	PMSTA42	I_E = 0; V_{CB} = 200 V	–	100	nA
	PMSTA43	I_E = 0; V_{CB} = 160 V	–	100	nA
I_{EBO}	emitter cut-off current				
	PMSTA42	I_C = 0; V_{EB} = 6 V	–	100	nA
	PMSTA43	I_C = 0; V_{EB} = 4 V	–	100	nA
h_{FE}	DC current gain	I_C = 1 mA; V_{CE} = 10 V	25	–	
		I_C = 10 mA; V_{CE} = 10 V	40	–	
		I_C = 30 mA; V_{CE} = 10 V; note 1	40	–	
V_{CEsat}	collector-emitter saturation voltage	I_C = 20 mA; I_B = 2 mA	–	500	mV
C_{re}	feedback capacitance	$I_C = i_c$ = 0; V_{CB} = 20 V; f = 1 MHz			
	PMSTA42		–	3	pF
	PMSTA43		–	4	pF
f_T	transition frequency	I_C = 10 mA; V_{CE} = 20 V; f = 100 MHz	50	–	MHz

Note

1. Pulse test: $t_p \leq 300\ \mu s$; $\delta \leq 0.02$.

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

DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

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