

PBSS5140U,135 Datasheet



DiGi Electronics Part Number	PB
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Description	TR
Detailed Description	Bip W S

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PBSS5140U,135-DG

Nexperia USA Inc.

PBSS5140U,135

TRANS PNP 40V 1A SOT323

Bipolar (BJT) Transistor PNP 40 V 1 A 150MHz 350 m W Surface Mount SOT-323

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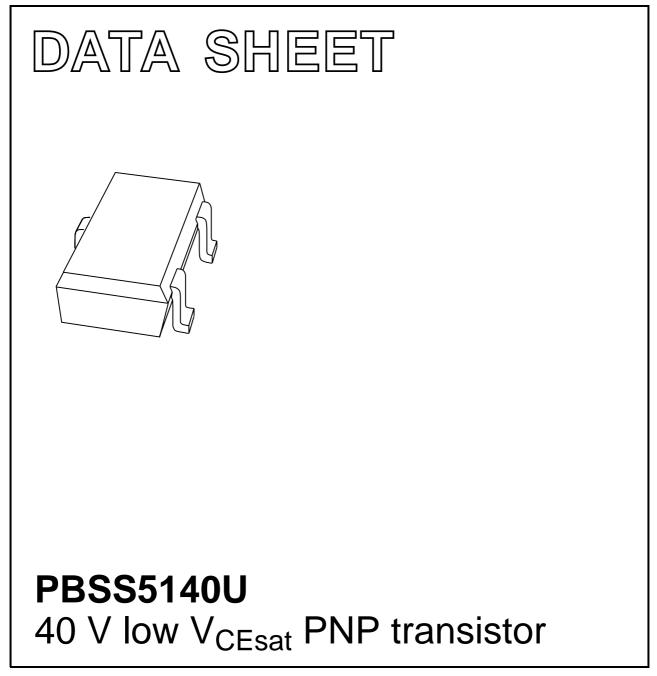
Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
PBSS5140U,135	Nexperia USA Inc.
Series:	Product Status:
	Active
Transistor Type:	Current - Collector (Ic) (Max):
PNP	1 A
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ lb, lc:
40 V	500mV @ 100mA, 1A
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ lc, Vce:
100nA	300 @ 100mA, 5V
Power - Max:	Frequency - Transition:
350 mW	150MHz
Operating Temperature:	Grade:
150°C (TJ)	Automotive
Qualification:	Mounting Type:
AEC-Q100	Surface Mount
Package / Case:	Supplier Device Package:
SC-70, SOT-323	SOT-323
Base Product Number:	
PBSS5140	

Environmental & Export classification

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

DISCRETE SEMICONDUCTORS



Product data sheet Supersedes data of 2001 Mar 27 2001 Jul 20



NXP Semiconductors

Product data sheet

PBSS5140U

40 V low V_{CEsat} PNP transistor

FEATURES

- Low collector-emitter saturation voltage
- High current capability
- Improved device reliability due to reduced heat generation
- Enhanced performance over SOT23 1A standard packaged transistor.

APPLICATIONS

- General purpose switching and muting
- LCD back lighting
- Supply line switching circuits
- Battery driven equipment (mobile phones, video cameras and hand-held devices).

DESCRIPTION

 PNP low $\mathsf{V}_{\mathsf{CEsat}}$ transistor in a SOT323 (SC-70) plastic package.

MARKING

TYPE NUMBER	MARKING CODE
PBSS5140U	51t

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V _{CEO}	collector-emitter voltage	-40	V
I _{CM}	peak collector current	-2	А
R _{CEsat}	equivalent on-resistance	<500	mΩ

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

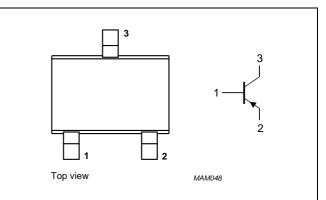


Fig.1 Simplified outline (SOT323; SC-70) and symbol.

40 V low V_{CEsat} PNP transistor

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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	_	-40	V
V _{EBO}	emitter-base voltage	open collector	_	-5	V
I _C	collector current (DC)		_	-1	А
I _{CM}	peak collector current		_	-2	А
I _{BM}	peak base current		_	-1	А
P _{tot}	total power dissipation	$T_{amb} \le 25 \ ^{\circ}C$; note 1	_	250	mW
		$T_{amb} \le 25 \ ^{\circ}C$; note 2	_	350	mW
T _{stg}	storage temperature		-65	+150	°C
Tj	junction temperature		_	150	°C
T _{amb}	operating ambient temperature		-65	+150	°C

Notes

- 1. Device mounted on a printed-circuit board, single sided copper, tinplated and standard footprint.
- 2. Device mounted on a printed-circuit board, single sided copper, tinplated and mounting pad for collector 1 cm².

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to	in free air; note 1	500	K/W
	ambient	in free air; note 2	357	K/W

Notes

- 1. Device mounted on a printed-circuit board, single sided copper, tinplated and standard footprint.
- 2. Device mounted on a printed-circuit board, single sided copper, tinplated and mounting pad for collector 1 cm².

40 V low V_{CEsat} PNP transistor

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CHARACTERISTICS

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

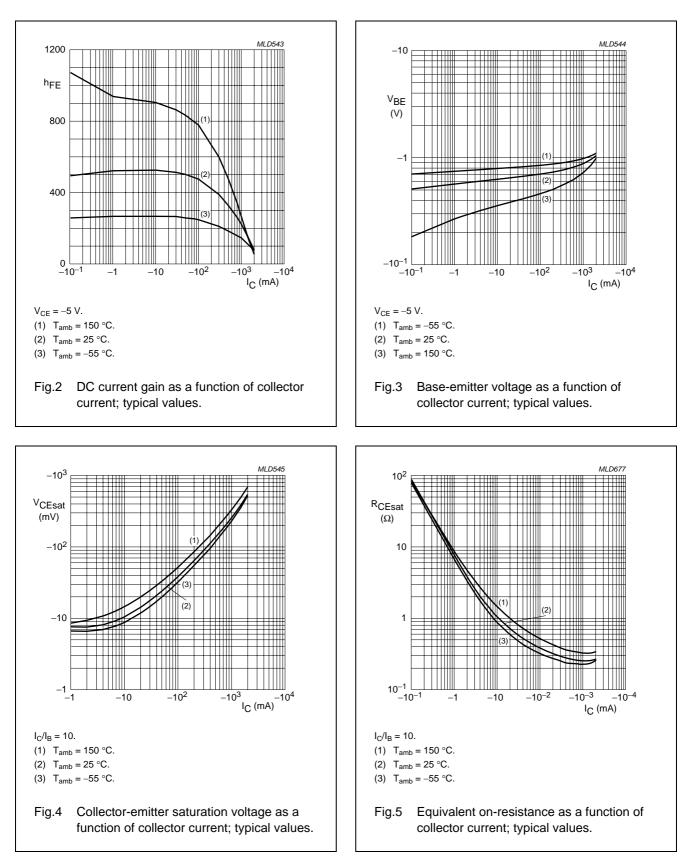
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CBO}	collector-base cut-off current	$V_{CB} = -40 \text{ V}; \text{ I}_{C} = 0$	—	_	-100	nA
		$V_{CB} = -40 \text{ V}; \text{ I}_{C} = 0; \text{ T}_{amb} = 150 ^{\circ}\text{C}$	_	_	-50	μA
I _{CEO}	collector-emitter cut-off current	$V_{CE} = -30 \text{ V}; \text{ I}_{B} = 0$	-	-	-100	nA
I _{EBO}	emitter-base cut-off current	$V_{EB} = -5 \text{ V}; \text{ I}_{C} = 0$	-	-	-100	nA
h _{FE}	DC current gain	$V_{CE} = -5 \text{ V}; \text{ I}_{C} = -1 \text{ mA}$	300	_	_	
		$V_{CE} = -5 \text{ V}; \text{ I}_{C} = -100 \text{ mA}$	300	_	800	
		$V_{CE} = -5 \text{ V}; \text{ I}_{C} = -500 \text{ mA}$	250	-	-	
		$V_{CE} = -5 \text{ V}; \text{ I}_{C} = -1 \text{ A}$	160	_	_	
V _{CEsat}	saturation voltage	$I_{C} = -100 \text{ mA}; I_{B} = -1 \text{ mA}$	_	_	-200	mV
		$I_{\rm C} = -500 \text{ mA}; I_{\rm B} = -50 \text{ mA}$	—	_	-250	mV
		$I_{\rm C} = -1$ A; $I_{\rm B} = -100$ mA	_	_	-500	mV
R _{CEsat}	equivalent on-resistance	$I_{C} = -500 \text{ mA}; I_{B} = -50 \text{ mA}; \text{ note } 1$	_	300	<500	mΩ
V _{BEsat}	base-emitter saturation voltage	$I_{\rm C} = -1$ A; $I_{\rm B} = -50$ mA	—	_	-1.1	V
V _{BEon}	base-emitter turn-on voltage	$V_{CE} = -5 V; I_C = -1 A$	_	_	-1	V
f _T	transition frequency	$I_{C} = -50 \text{ mA}; V_{CE} = -10 \text{ V};$ f = 100 MHz	150	-	-	MHz
C _c	collector capacitance	$V_{CB} = -10 \text{ V}; I_E = I_e = 0; f = 1 \text{ MHz}$	—	-	12	pF

Note

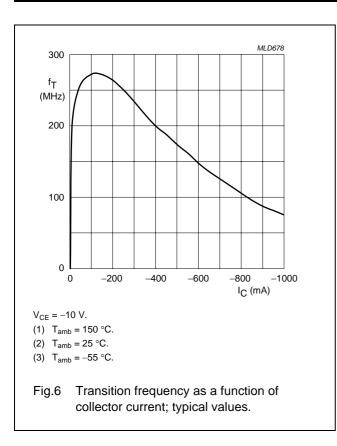
1. Pulse test: $t_p \leq 300~\mu s;~\delta \leq 0.02.$

40 V low V_{CEsat} PNP transistor

PBSS5140U



40 V low V_{CEsat} PNP transistor



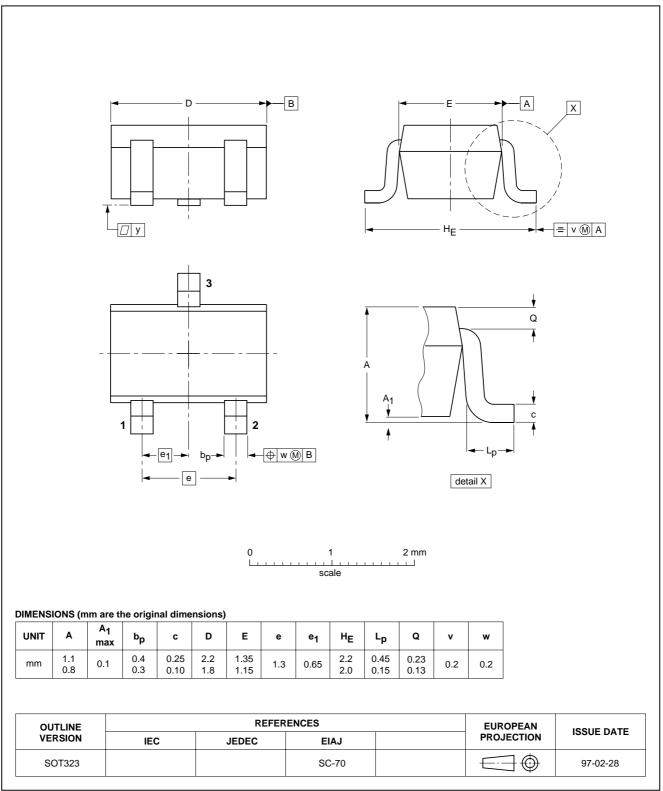
PBSS5140U

SOT323

40 V low V_{CEsat} PNP transistor

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads



PBSS5140U

40 V low V_{CEsat} PNP transistor

PBSS5140U

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.

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NXP Semiconductors

Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors. No changes were made to the content, except for the legal definitions and disclaimers.

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