

SOT-89-3L Plastic-Encapsulate Transistors

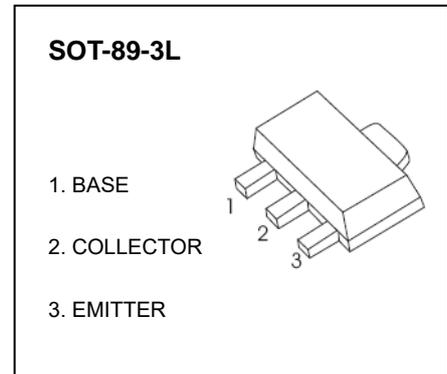
PBSS4540X TRANSISTOR (NPN)

FEATURES

- High h_{FE} and low V_{CEsat} at high current operation
- High collector current capability: I_C maximum 4 A
- High efficiency leading to less heat generation.

APPLICATIONS

- Medium power peripheral drivers (e.g. fan and motor)
- Strobe flash units for DSC and mobile phones
- Inverter applications (e.g. TFT displays)
- Power switch for LAN and ADSL systems
- Medium power DC-to-DC conversion
- Battery chargers.



MARKING: W1B

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

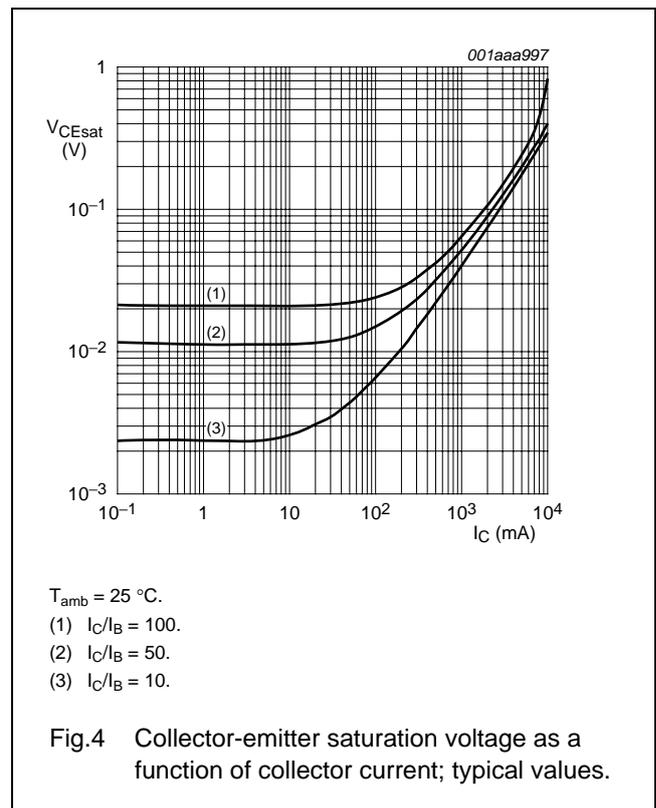
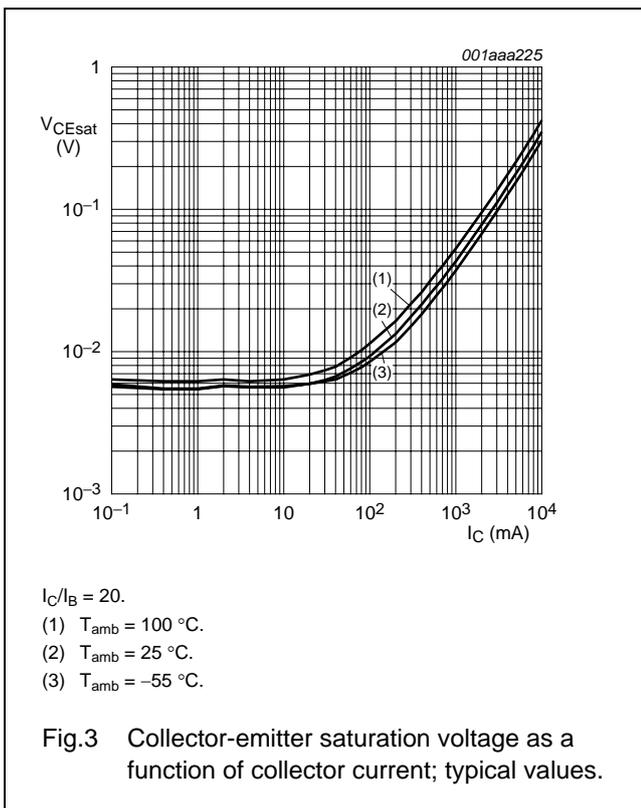
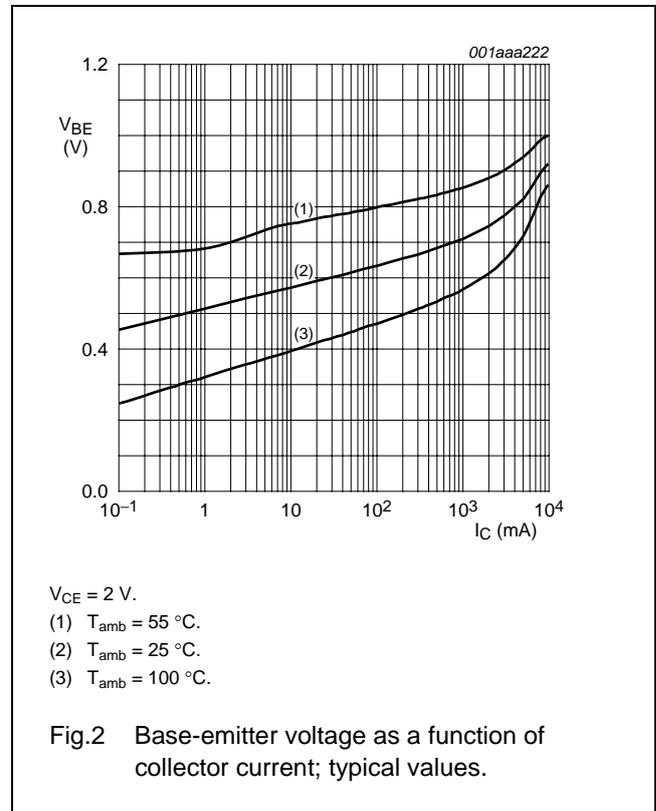
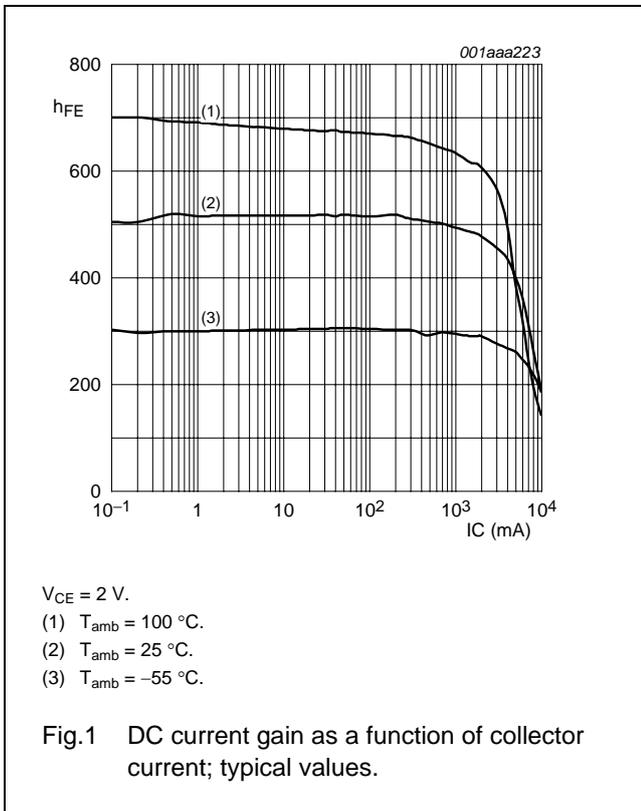
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	40	V
V_{CEO}	collector-emitter voltage	open base	–	40	V
V_{EBO}	emitter-base voltage	open collector	–	6	V
I_C	collector current (DC)		–	4	A
I_{CM}	peak collector current	$t_p \leq 1 \text{ ms}$	–	10	A
I_B	base current (DC)		–	1	A
I_{BM}	peak base current	$t_p \leq 1 \text{ ms}$	–	2	A
P_{tot}	total power dissipation	$T_{amb} \leq 25^\circ\text{C}$	–	0.55	W
T_{stg}	storage temperature		–55	+150	$^\circ\text{C}$
T_j	junction temperature		–	150	$^\circ\text{C}$
T_{amb}	operating ambient temperature		–55	+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CBO}	collector-base cut-off current	V _{CB} = 30 V; I _E = 0 A	–	–	100	nA
		V _{CB} = 30 V; I _E = 0 A; T _j = 150 °C	–	–	50	μA
I _{CES}	collector-emitter cut-off current	V _{CE} = 30 V; V _{BE} = 0 V	–	–	0.1	μA
I _{EBO}	emitter-base cut-off current	V _{EB} = 5 V; I _C = 0 A	–	–	100	nA
h _{FE}	DC current gain	V _{CE} = 2 V; I _C = 0.5 A	300	–	–	
		V _{CE} = 2 V; I _C = 1 A; note 1	300	–	–	
		V _{CE} = 2 V; I _C = 2 A; note 1	250	–	–	
		V _{CE} = 2 V; I _C = 5 A; note 1	100	–	–	
V _{CEsat}	collector-emitter saturation voltage	I _C = 0.5 A; I _B = 5 mA	–	–	90	mV
		I _C = 1 A; I _B = 10 mA	–	–	120	mV
		I _C = 2 A; I _B = 200 mA; note 1	–	–	150	mV
		I _C = 4 A; I _B = 200 mA; note 1	–	–	290	mV
		I _C = 5 A; I _B = 500 mA; note 1	–	–	355	mV
R _{CEsat}	equivalent on-resistance	I _C = 5 A; I _B = 500 mA; note 1	–	40	71	mΩ
V _{BEsat}	base-emitter saturation voltage	I _C = 4 A; I _B = 200 mA; note 1	–	–	1.1	V
		I _C = 5 A; I _B = 500 mA; note 1	–	–	1.2	V
V _{BEon}	base-emitter turn-on voltage	V _{CE} = 2 V; I _C = 2 A	–	–	1.1	V
f _T	transition frequency	V _{CE} = 10 V; I _C = 0.1 A; f = 100 MHz	70	–	–	MHz
C _c	collector capacitance	V _{CB} = 10 V; I _E = I _e = 0 A; f = 1 MHz	–	–	75	pF

Note

1. Pulse test: t_p ≤ 300 μs; δ ≤ 0.02.

Typical Characteristics


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