PNP TRANSISTOR

FEATURES

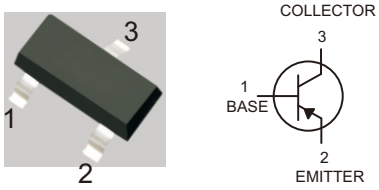
- Low collector-emitter saturation voltage
- High current capability
- Improved device reliability due to reduced heat generation
- We declare that the material of product compliance with RoHS requirements

APPLICATIONS

- Supply line switching circuits
- Battery management applications
- DC/DC converter applications
- Strobe flash units
- Heavy duty battery powered equipment (motor and lamp drivers)

PINNING

PIN	DESCRIPTION
1	BASE
2	EMITTER
3	COLLECTOR



Simplified outline SOT-23 and symbol

MAXIMUM RATINGS (Ta =25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector– Base Voltage	V_{CBO}	-40	V
Collector– Emitter Voltage	V_{CEO}	-40	V
Emitter– Base Voltage	V_{EBO}	-5	V
Collector Current — Continuous	I_C	-2	A
Collector Power Dissipation	P_C	0.3	W
Thermal Resistance From JunctionTo Ambient	R_{thJA}	417	°C/W
Operation Junction and Storage Temperature Range	T_J , T_{stg}	-55~ +150	°C

ELECTRICAL CHARACTERISTICS(TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = 0.1mA , I_E = 0	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 1mA , I_B = 0	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E = 0.1mA , I_C = 0	-5			V
Collector cut-off current	I_{CBO}	V_{CB} = -30V, I_E = 0			-100	nA
Emitter cut-off current	I_{EBO}	V_{EB} = -4V, I_C =0			-100	nA
DC current gain	$h_{FE(1)}$	V_{CE} = -2V, I_C = -100mA	300			
	$h_{FE(2)}$	V_{CE} = -2V, I_C = -500mA	260			
	$h_{FE(3)}$	V_{CE} = -2V, I_C = -1A	210			
	$h_{FE(4)}$	V_{CE} = -2V, I_C = -2A	100			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = -100mA , I_B = -1mA			-100	mV
		I_C = -500mA , I_B = -50mA			-110	mV
		I_C = -750mA , I_B = -15mA			-225	mV
		I_C = -1A , I_B = -50mA			-225	mV
		I_C = -2A , I_B = -200mA			-350	mV
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = -2A , I_B = -200mA			-1.1	V
Base-emitter voltage	$V_{BE(ON)}$	V_{CE} = -2V , I_C = -100mA			-0.75	V
Transition frequency	f_T	V_{CE} = -10V, I_C = -100mA , f=100MHz	100			MHz

TYPICAL CHARACTERICS

Fig.1 DC CURRENT GAIN VS.COLLECTOR CURRENT

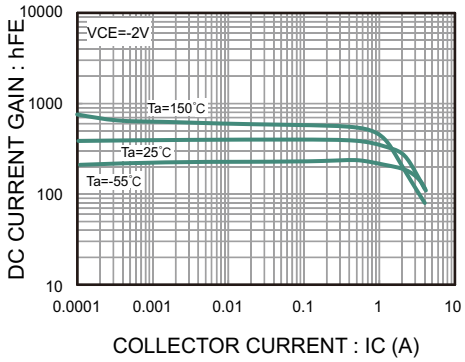


Fig.2 BASE-EMITTER TURN-ON VOLTAGE VS.COLLECTOR CURRENT

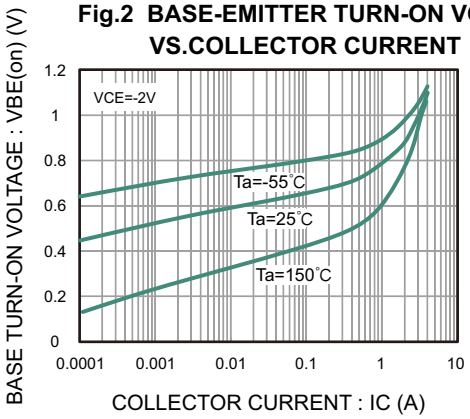


Fig.3 COLLECTOR-EMITTER SATURATION VOLTAGE VS.COLLECTOR CURRENT

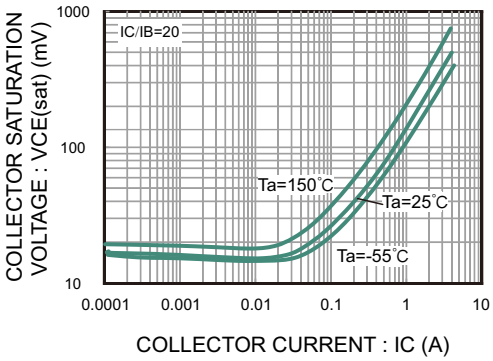


Fig.4 BASE-EMITTER SATURATION VOLTAGE VS.COLLECTOR CURRENT

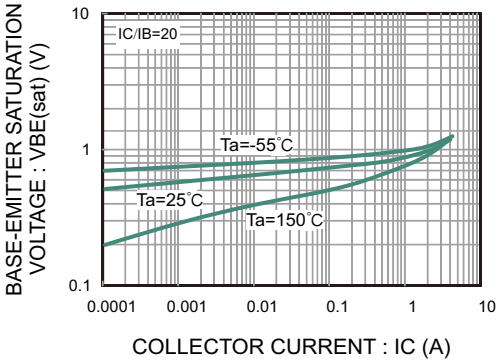


Fig.5 COLLECTOR CURRENT VS.COLLECTOR-EMITTER SATURATION VOLTAGE

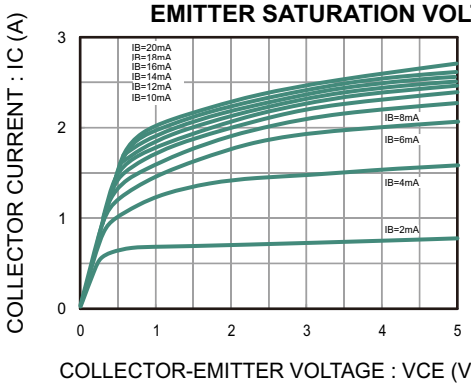
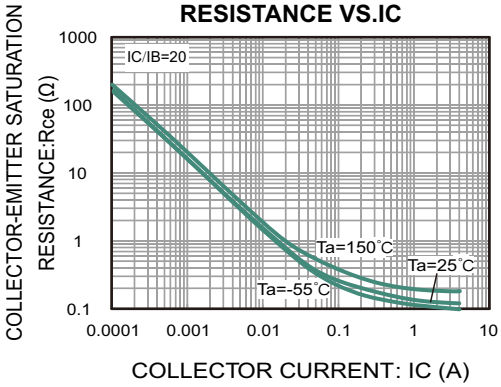
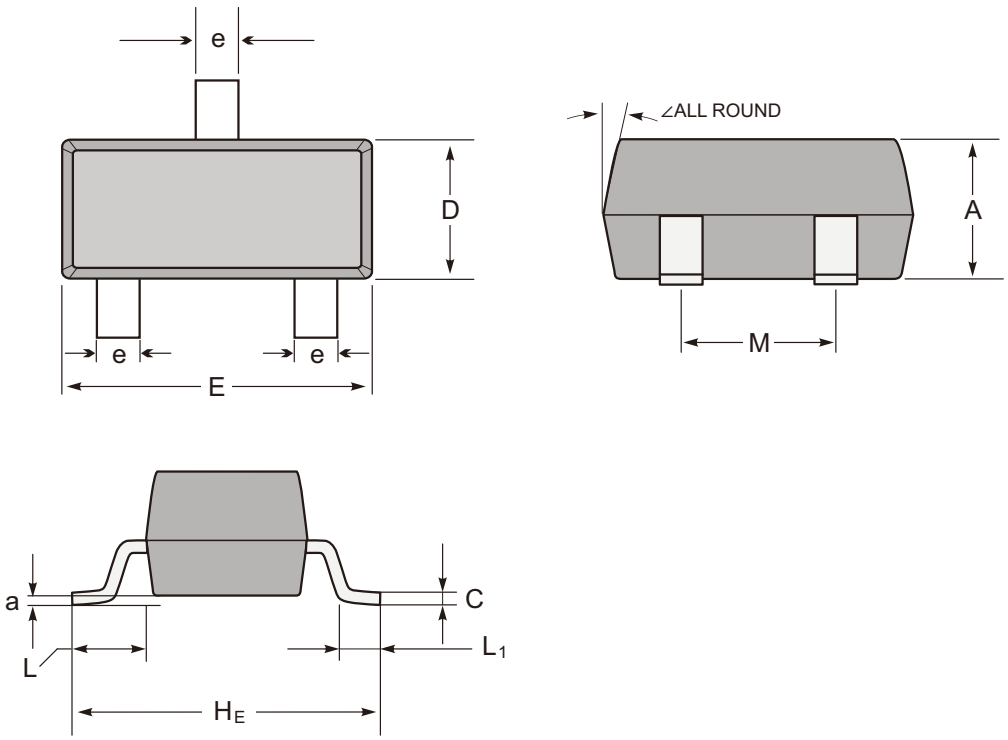


Fig.6 COLLECTOR-EMITTER SATURATION RESISTANCE VS.IC



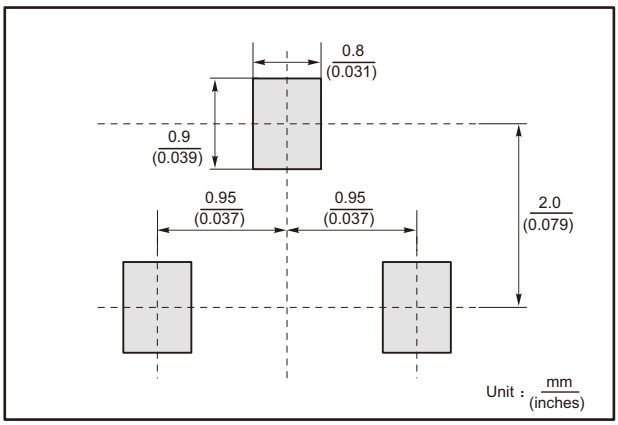
SOT-23 Package Outline Dimensions



SOT-23 mechanical data

UNIT		A	C	D	E	H_E	e	M	L	L_1	a	∠
mm	max	1.1	0.20	1.4	3.0	2.6	0.6	1.95	0.55 (ref)	0.36 (ref)	0.15	12°
	min	0.9	0.08	1.2	2.8	2.2	0.35	1.7			0.0	
mil	max	43	7.9	55	118	102	24	77	22 (ref)	14 (ref)	6	
	min	35	3.1	47	110	87	13	67			0.0	

The recommended mounting pad size



Marking

Type number	Marking code
MMBT5240WD	ZF

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