

SOT-23 Plastic-Encapsulate Transistors

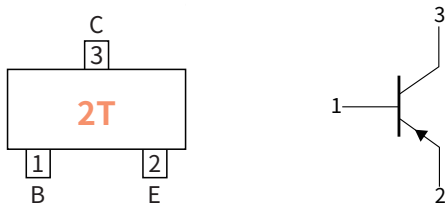
Features

- Complementary to MMBT4401
- Power dissipation of 300mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

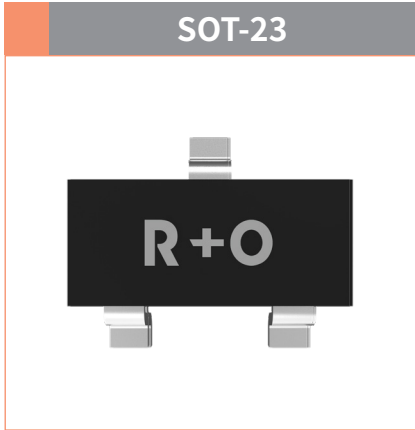
Mechanical Data

- Case: SOT-23
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Function Diagram



Collector-Base Voltage
VCBO -40V
Collector Current
-0.6 Ampere



Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	V_{CBO}	V	-40
Collector-Emitter Voltage	V_{CEO}		-40
Emitter-Base Voltage	V_{EBO}		-5.0
Collector Current	I_C	A	-0.6
Collector Power Dissipation	P_C	mW	300
Storage temperature	T_{stg}	°C	-55 ~+150
Junction temperature	T_j	°C	-55 ~+150
Typical Thermal Resistance	$R_{\theta J-A}$	°C /W	417

Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	f_T	$I_C = -20mA, V_{CE} = -10V, f = 100MHz$	MHz	200	—

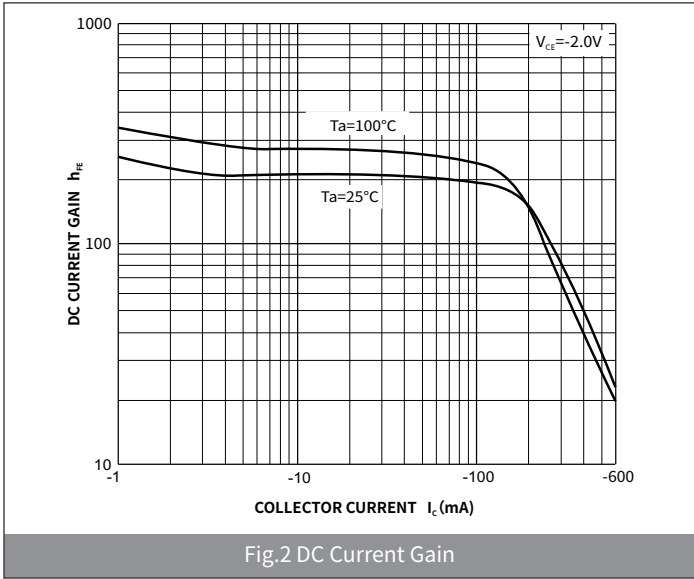
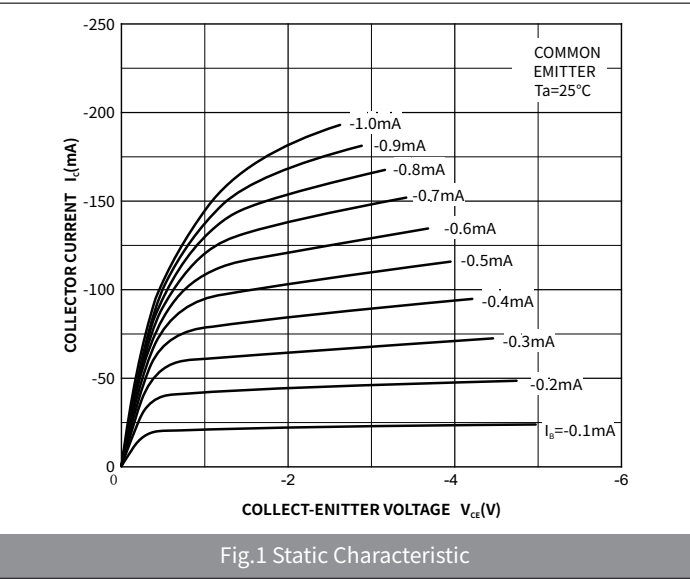
Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

● Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition	Min	Max
Collector-Base Breakdown Voltage	V_{CBO}	V	$I_C=-100\mu A, I_E=0$	-40	—
Collector-Emitter Breakdown Voltage	V_{CEO}		$I_C=-1.0mA, I_B=0$	-40	—
Emitter-Base Breakdown Voltage	V_{EBO}		$I_E=-100\mu A, I_C=0$	-5.0	—
Collector-Base cut-off current	I_{CBO}	nA	$V_{CB}=-35V, I_E=0$	—	-100
Emitter-Base cut-off current	I_{EBO}		$V_{EB}=-4.0V, I_C=0$	—	-100
DC Current Gain	h_{FE}	—	$I_C=-0.1mA, V_{CE}=-1.0V$	30	—
			$I_C=-1.0mA, V_{CE}=-1.0V$	60	—
			$I_C=-10mA, V_{CE}=-1.0V$	100	—
			$I_C=-150mA, V_{CE}=-2.0V$	100	300
			$I_C=-500mA, V_{CE}=-2.0V$	20	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	V	$I_C=-150mA, I_B=-15mA$	—	-0.4
Collector-Emitter Saturation Voltage	$V_{CE(sat)2}$		$I_C=-500mA, I_B=-50mA$	—	-0.75
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$		$I_C=-150mA, I_B=-15mA$	-0.75	-0.95
Base-Emitter Saturation Voltage	$V_{BE(sat)2}$		$I_C=-500mA, I_B=-50mA$	—	-1.3
Delay time	t_d	ns	$V_{CC}=-30V, V_{EB}=-2.0V$ $I_C=-150mA, I_{B1}=-15mA$	—	15
Rise time	t_r			—	20
Storage time	t_s		$V_{CC}=-30V, I_C=-150mA$ $I_{B1}=I_{B2}=-15mA$	—	225
Fall time	t_f			—	30

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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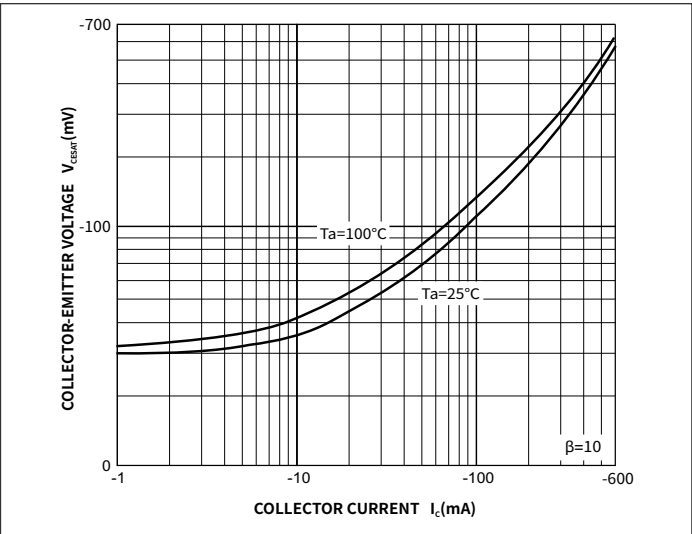


Fig.3 Collector-Emitter Saturation Voltage

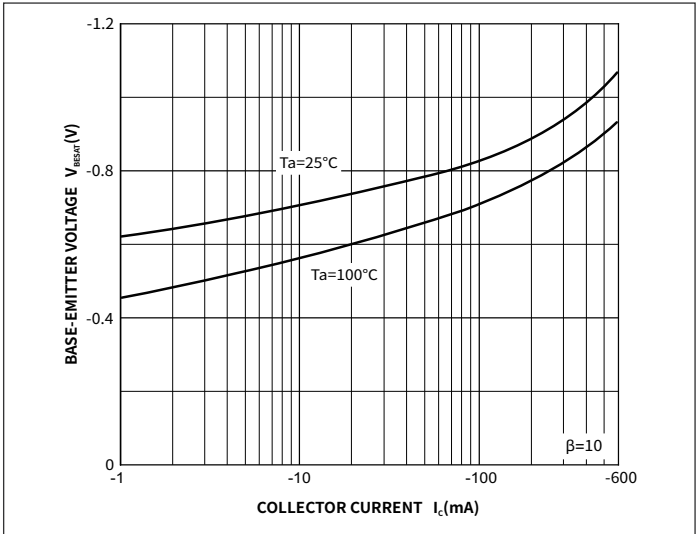


Fig.4 Base-Emitter Saturation Voltage

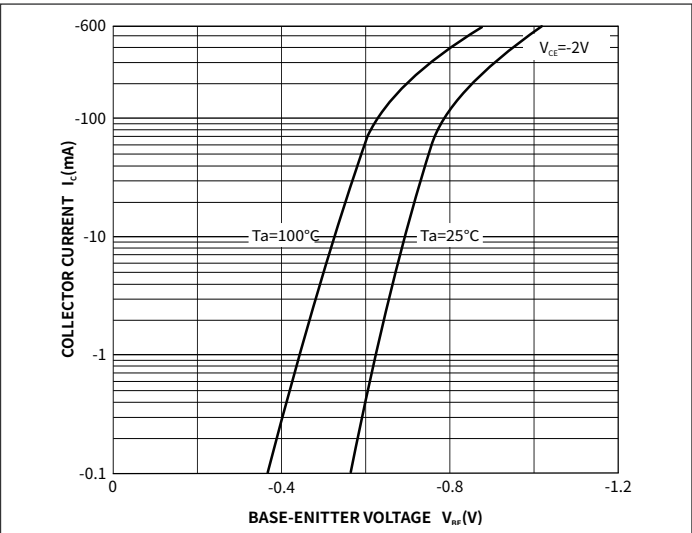


Fig.5 Base-Emitter On Voltage

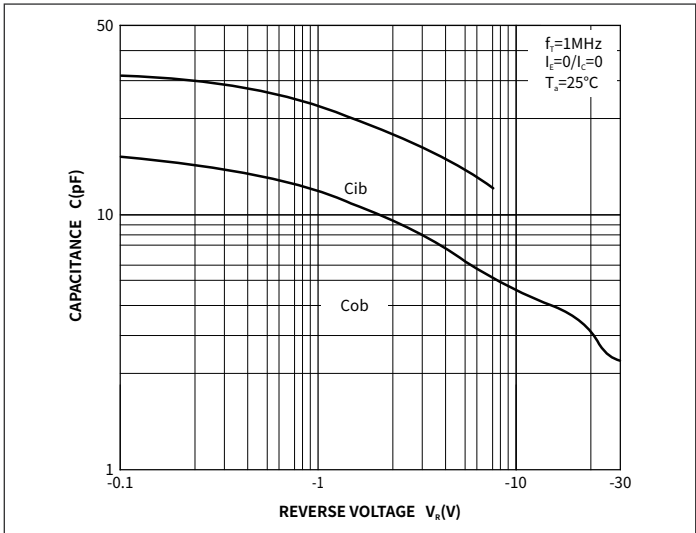
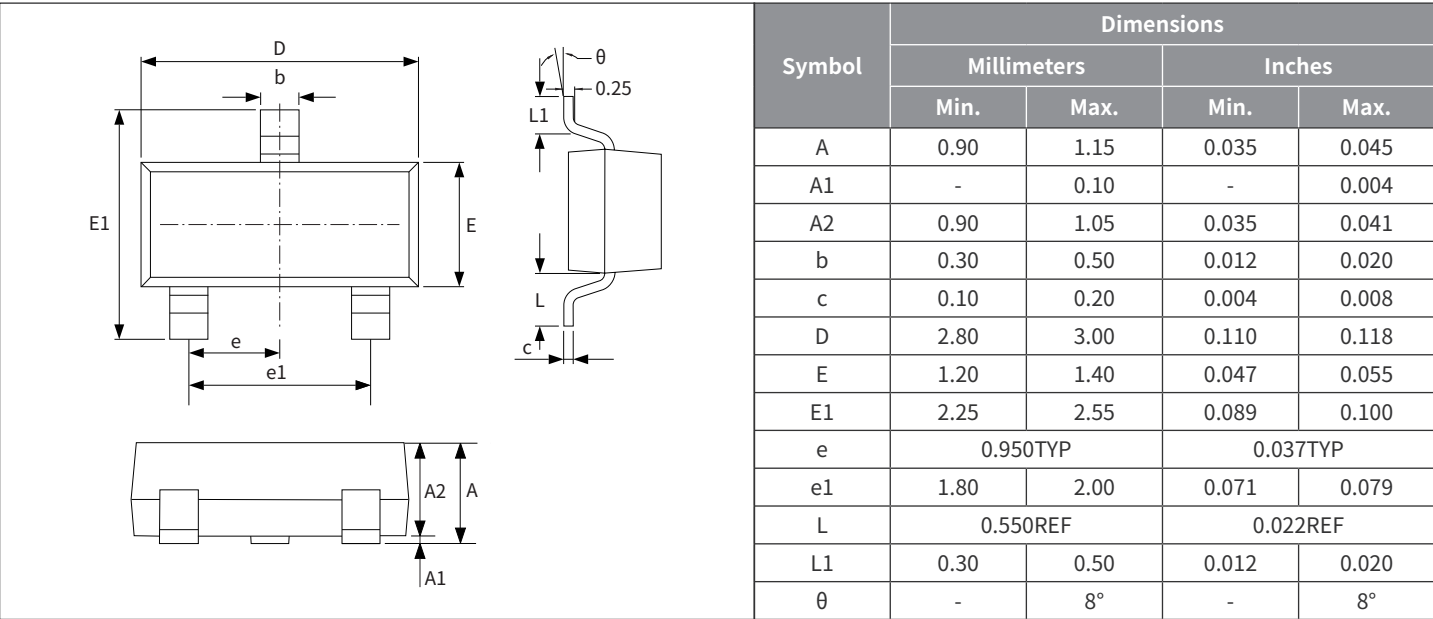


Fig.6 $C_{ob}/C_{ib}-V_{CB} V_{EB}$

● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

