

General Purpose PNP Transistor

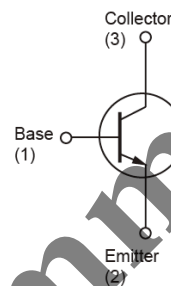
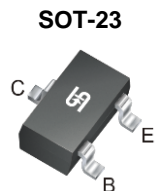
FEATURES

- Low $V_{CE(SAT)}$ -0.4 @ $I_C / I_B = -150mA / -15mA$
- PNP Silicon Transistor
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATION

- Consumer electronics
- General purpose amplification

KEY PERFORMANCE PARAMETERS			
PARAMETER		VALUE	UNIT
BV_{CBO}		-60	V
BV_{CEO}		-60	V
I_C		-0.6	A
$V_{CE(SAT)}$	$I_C = -150mA, I_B = -15mA$	-0.4	V



Notes: MSL 1 (Moisture Sensitivity Level) per J-STD-020

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	LIMIT	UNIT
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-0.6	A
Collector Power Dissipation	P_D	225	mW
Operating Junction Temperature	T_J	+150	$^\circ\text{C}$
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	$^\circ\text{C}$

Note: Single pulse, $P_w \leq 380\mu\text{s}$, Duty $\leq 2\%$

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction to Ambient Thermal Resistance	$R_{\theta JA}$	556	$^\circ\text{C/W}$

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static (Note 1)						
Collector-Base Breakdown Voltage	$I_C = -10\mu\text{A}, I_E = 0$	BV_{CBO}	-60	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = -10\text{mA}, I_B = 0$	BV_{CEO}	-60	--	--	V
Emitter-Base Breakdown Voltage	$I_E = -10\mu\text{A}, I_C = 0$	BV_{EBO}	-5	--	--	V
Collector Cutoff Current	$V_{CB} = -50\text{V}, I_E = 0$	I_{CBO}	--	--	-10	nA
Emitter Cutoff Current	$V_{EB} = -0.5\text{V}, V_{CE} = -30\text{V}$	I_{EBO}	--	--	-50	nA
Collector-Emitter Saturation Voltage	$I_C/I_B = -150\text{mA} / -15\text{mA}$	$*V_{CE(SAT)}$	--	--	-0.4	V
Base-Emitter Saturation Voltage	$I_C/I_B = -500\text{mA} / -50\text{mA}$	$*V_{BE(SAT)}$	--	--	-1.3	V
DC Current Transfer Ratio	$V_{CE} = -10\text{V}, I_C = -0.1\text{A}$	$*h_{FE1}$	75	--	--	
	$V_{CE} = -10\text{V}, I_C = -150\text{mA}$	$*h_{FE2}$	100	--	300	
Transition Frequency	$V_{CE} = -5\text{V}, I_C = -50\text{mA}, f = 100\text{MHz}$	f_T	200	--	--	MHz
Output Capacitance	$V_{CB} = -10\text{V}, f = 1\text{MHz}$	C_{ob}	--	--	8	pF

Note: Pulse test: $\leq 380\mu\text{s}$, duty cycle $\leq 2\%$

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
TSA1036CX RFG	SOT-23	3,000pcs / 7" Reel

Not Recommended

ELECTRICAL CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, unless otherwise noted)

Figure 1. DC Current Gain

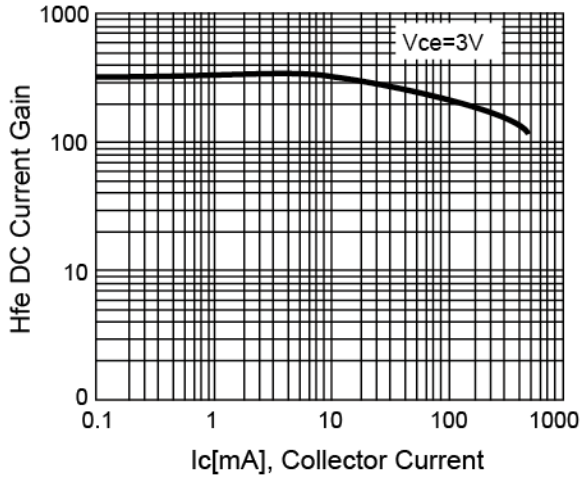


Figure 2. $V_{CE(SAT)}$ v.s. I_c

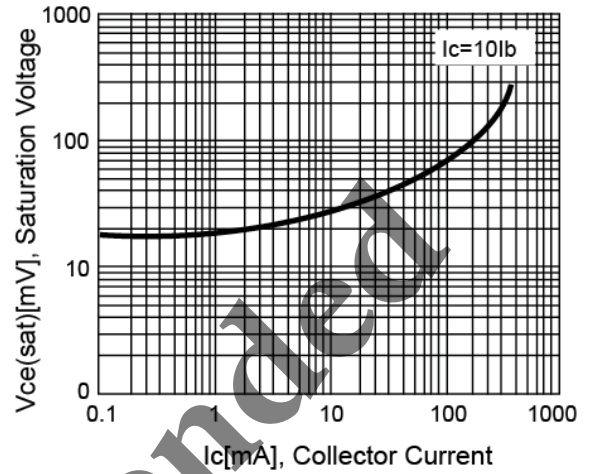


Figure 3. $V_{BE(SAT)}$ v.s. I_c

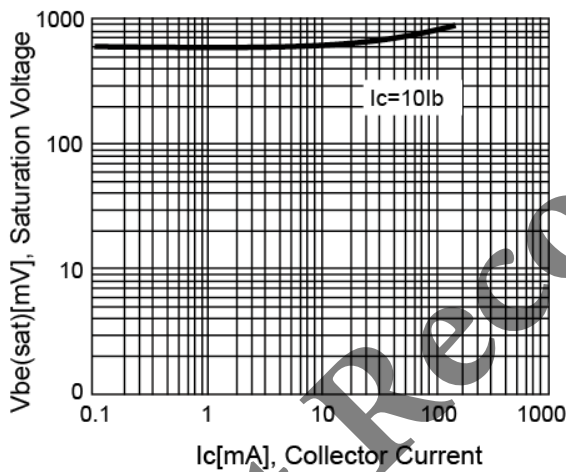


Figure 4. Cutoff Frequency vs. I_c

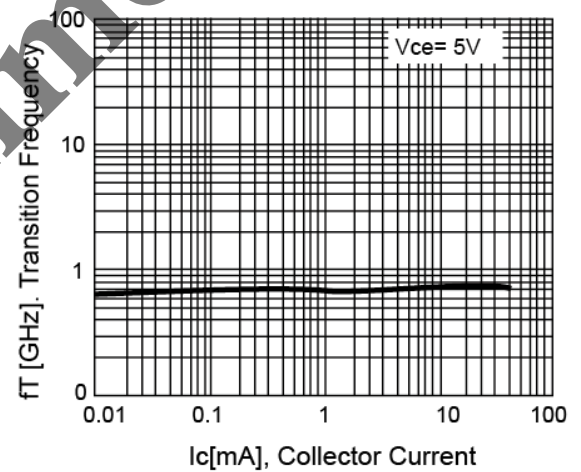
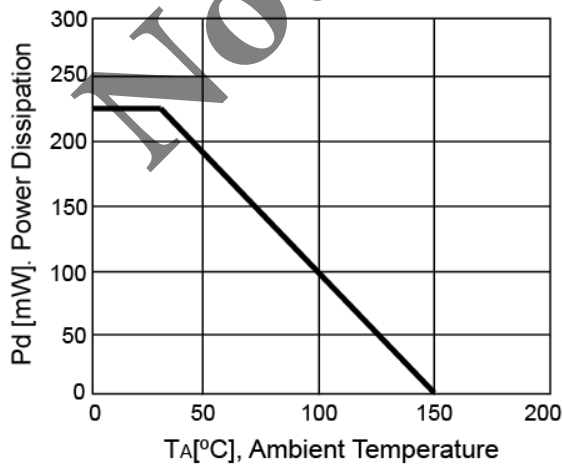
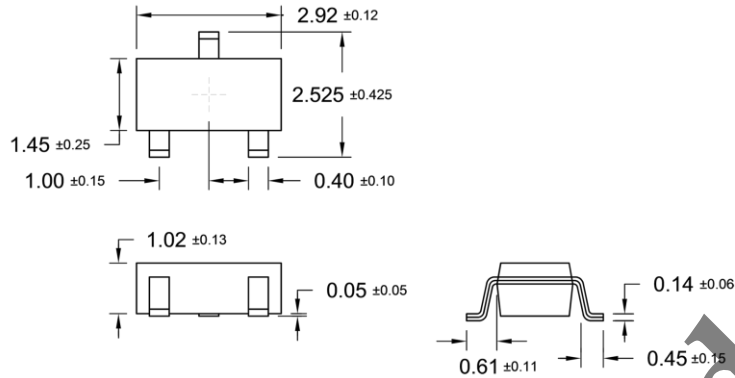


Figure 5. Power Derating Curve

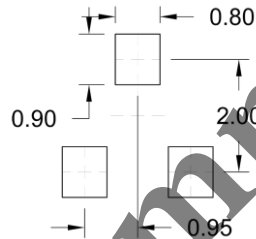


PACKAGE OUTLINE DIMENSIONS (Unit: Millimeters)

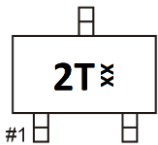
SOT-23



SUGGESTED PAD LAYOUT (Unit: Millimeters)



MARKING DIAGRAM



2T = Device Code

xx = Year Code + Month Code

Year Code: 7=2017, 8=2018

Month Code:

1 =Jan **2** =Feb **3** =Mar **4** =Apr

5 =May **6** =Jun **7** =Jul **8** =Aug

9 =Sep **A** =Oct **B** =Nov **C** =Dec

Not Recommended

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Taiwan Semiconductor:](#)

[TSA1036CX](#) [TSA1036CX RFG](#)