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

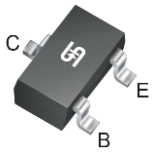
APPLICATION

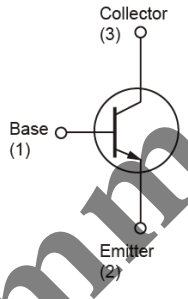
- Consumer electronics
- General purpose amplification

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

Pb-Free RoHS COMPLIANT HALOGEN FREE

SOT-23





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

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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	°C
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	°C

Note: Single pulse, Pw ≤ 380μs, Duty ≤ 2%

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**LIMIT**	**UNIT**
Junction to Ambient Thermal Resistance	$R_{\Theta JA}$	556	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)						
PARAMETER	**CONDITIONS**	**SYMBOL**	**MIN**	**TYP**	**MAX**	**UNIT**
Static (Note 1)						
Collector-Base Breakdown Voltage	I_C=-10μA, I_E=0	BV_{CBO}	-60	--	--	V
Collector-Emitter Breakdown Voltage	I_C=-10mA, I_B=0	BV_{CEO}	-60	--	--	V
Emitter-Base Breakdown Voltage	I_E=-10μA, I_C=0	BV_{EBO}	-5	--	--	V
Collector Cutoff Current	V_{CB}=-50V, I_E=0	I_{CBO}	--	--	-10	nA
Emitter Cutoff Current	V_{EB}=-0.5V, V_{CE}=-30V	I_{EBO}	--	--	-50	nA
Collector-Emitter Saturation Voltage	I_C/I_B =-150mA /-15mA	*$V_{CE(SAT)}$	--	--	-0.4	V
Base-Emitter Saturation Voltage	I_C/I_B =-500mA /-50mA	*$V_{BE(SAT)}$	--	--	-1.3	V
DC Current Transfer Ratio	V_{CE} =-10V, I_C=-0.1A	*h_{FE} 1	75	--	--	
	V_{CE} =-10V, I_C=-150mA	*h_{FE} 2	100	--	300	
Transition Frequency	V_{CE} =-5V, I_C=-50mA, f=100MHz	f_T	200	--	--	MHz
Output Capacitance	V_{CB} = -10V, f=1MHz	Cob	--	--	8	pF

Note: Pulse test: ≤ 380μs, duty cycle ≤ 2%

ORDERING INFORMATION

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

ELECTRICAL CHARACTERICS CURVES (T_A=25°C, unless otherwise noted)

Figure 1. DC Current Gain

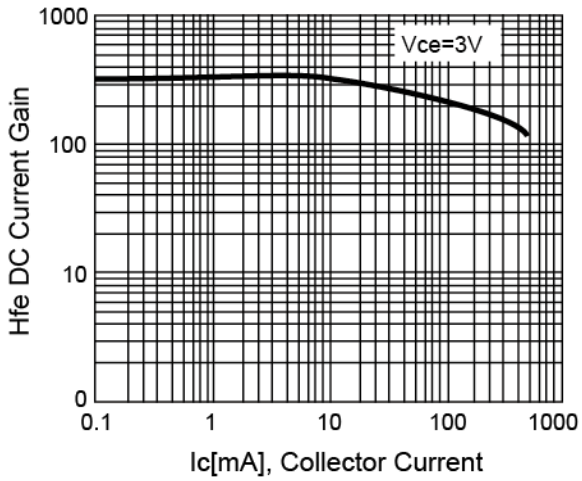


Figure 2. $V_{CE(SAT)}$ v.s. Ic

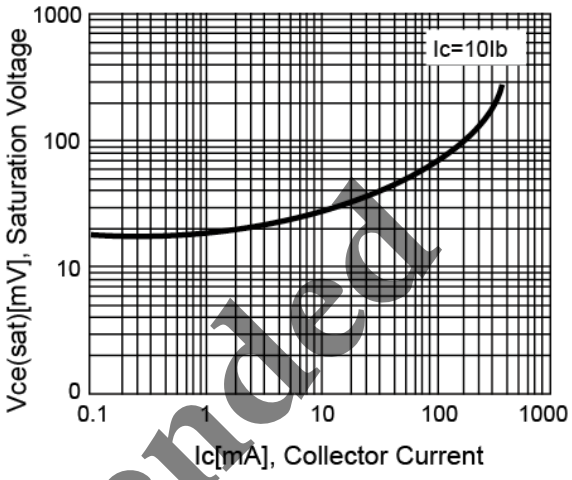


Figure 3. $V_{BE(SAT)}$ v.s. Ic

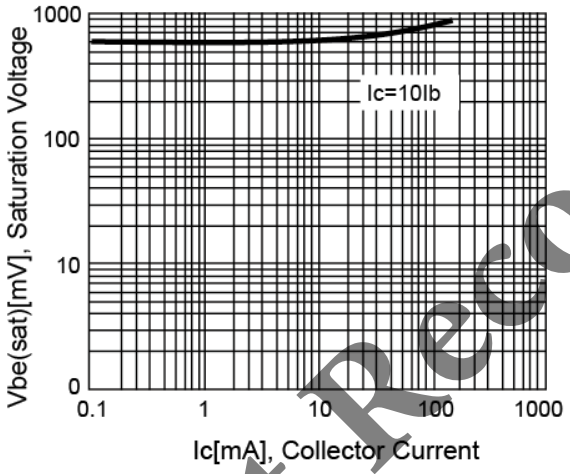


Figure 4. Cutoff Frequency vs. Ic

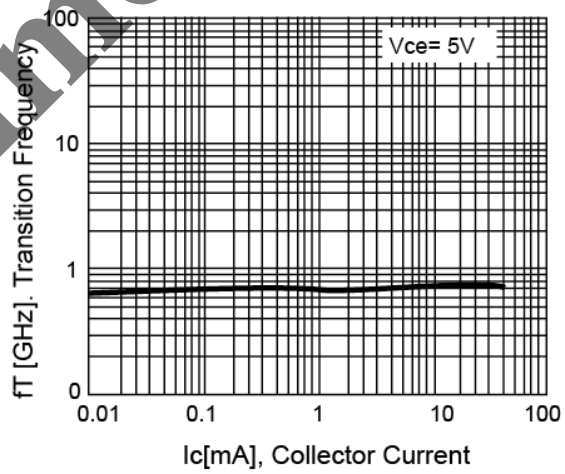
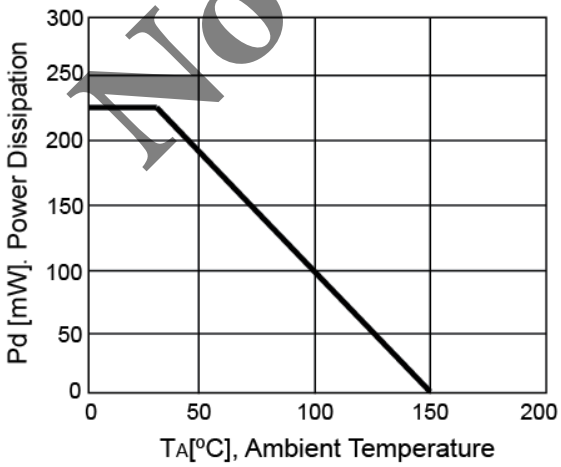
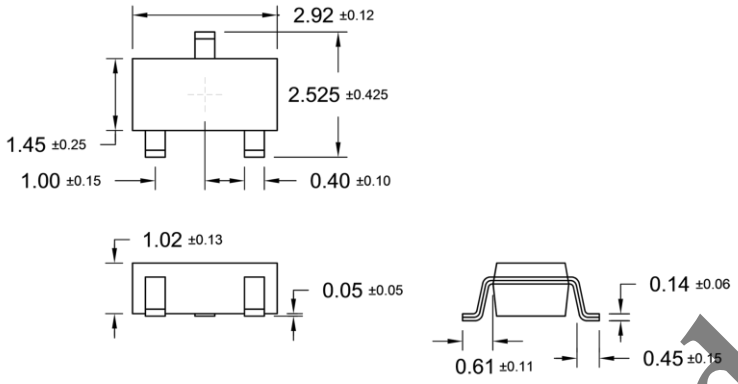


Figure 5. Power Derating Curve

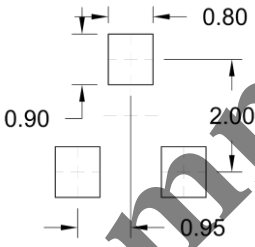


PACKAGE OUTLINE DIMENSIONS (Unit: Millimeters)

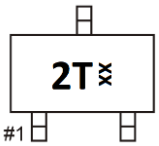
SOT-23



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

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