

### Description

Silicon NPN transistor in a SOT-23 Plastic Package

### Applications

Medium power amplifier and switch requiring collector currents up to 600 mA.

### Features

- Moisture Sensitivity Level: 1
- ESD Rating: Human Body Model; 4 kV
- Machine Model; 400 V
- Halogen-free Product

Symbol	Parameter	Max	Unit
$V_{CE0}$	collector-emitter voltage	40	V
$I_C$	collector current (DC)	600	mA

### Equivalent Circuit & Pinning



PIN1: Base

PIN 2: Emitter

PIN 3: Collector

### $h_{FE}$ Classifications & Marking

$h_{FE}$ Range	100~300
Marking	H2X

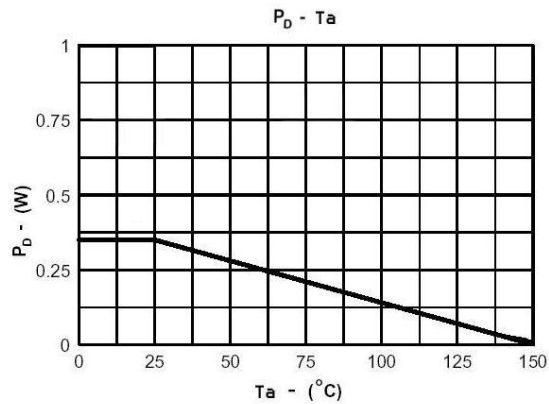
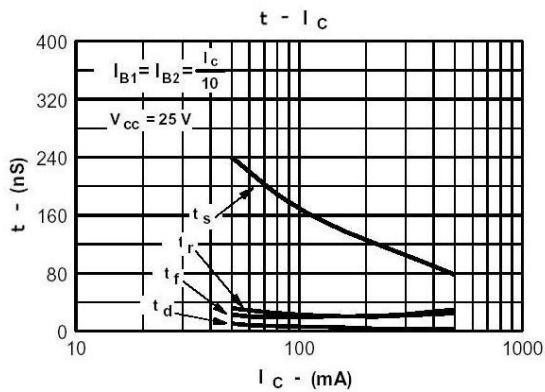
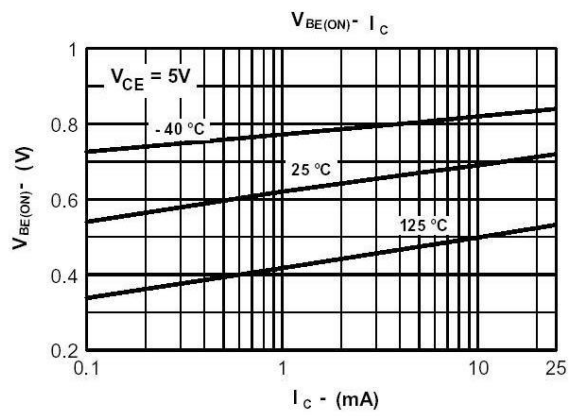
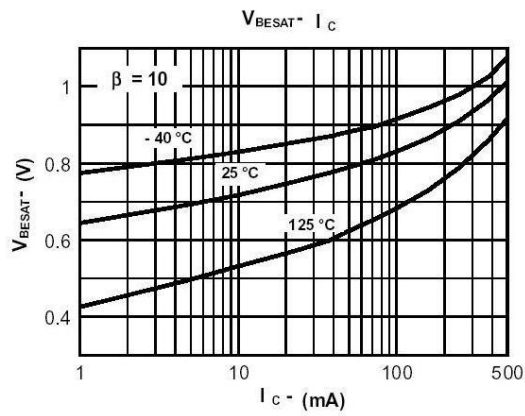
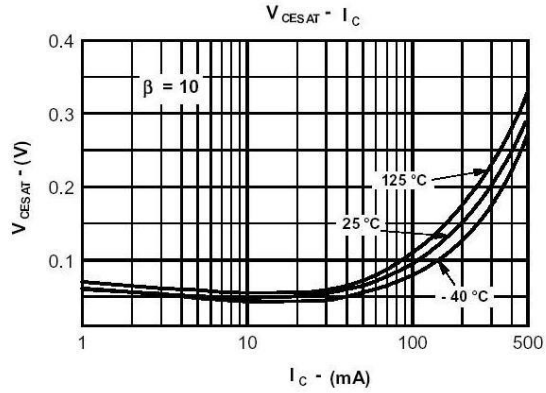
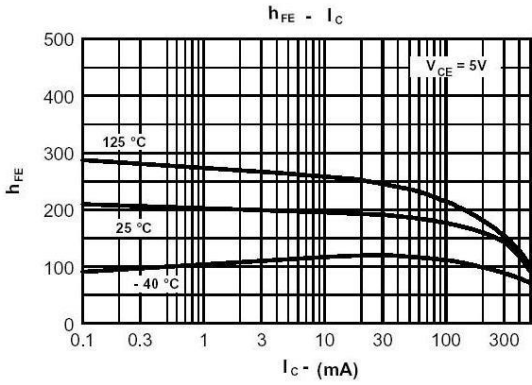
**Absolute Maximum Ratings(Ta=25°C)**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	60	V
Collector to Emitter Voltage	$V_{CEO}$	40	V
Emitter to Base Voltage	$V_{EBO}$	6.0	V
Collector Current	$I_C$	600	mA
Collector Power Dissipation	$P_C$	350	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55~150	°C

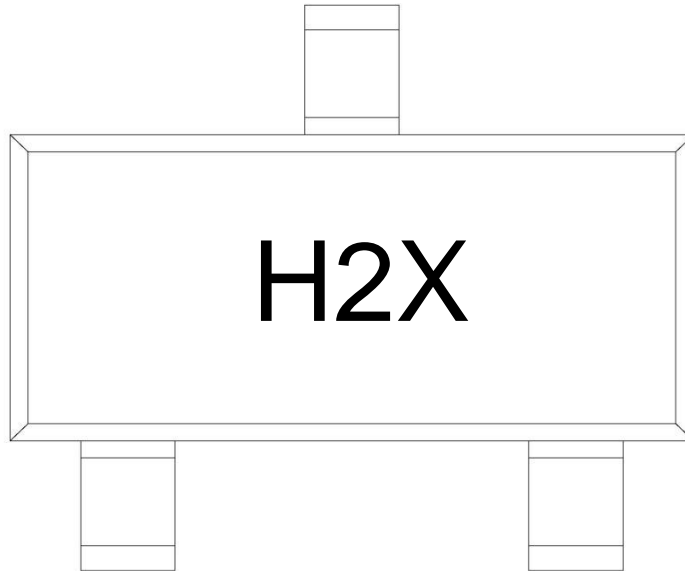
**Electrical Characteristics(Ta=25°C)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=1.0mA$ $I_B=0$	40			V
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C=0.1mA$ $I_E=0$	60			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=0.1mA$ $I_C=0$	6.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=60V$ $I_E=0$			50	nA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=6.0V$ $I_C=0$			50	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=1.0V$ $I_C=150mA$	100		300	
	$h_{FE(2)}$	$V_{CE}=2.0V$ $I_C=500mA$	40			
	$h_{FE(3)}$	$V_{CE}=1.0V$ $I_C=10mA$	80			
	$h_{FE(4)}$	$V_{CE}=1.0V$ $I_C=1.0mA$	40			
	$h_{FE(5)}$	$V_{CE}=1.0V$ $I_C=0.1mA$	20			
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=150mA$ $I_B=15mA$			0.4	V
	$V_{CE(sat)(2)}$	$I_C=500mA$ $I_B=50mA$			0.75	V
Base-Emitter Saturation Voltage	$V_{BE(sat)(1)}$	$I_C=150mA$ $I_B=15mA$	0.7 5		0.95	V
	$V_{BE(sat)(2)}$	$I_C=500mA$ $I_B=50mA$			1.2	V
Transition Frequency	$f_T$	$V_{CE}=10V$ $I_C=20mA$ $f=100MHz$	250			MHz
Delay Time	$t_d$	$V_{CC}=30V$ $I_C=150mA$			15	ns
Rise Time	$t_r$	$I_{B1}=15mA$			20	ns
Storage Time	$t_s$	$V_{CC}=30V$ $I_C=150mA$			225	ns
Fall Time	$t_f$	$I_{B1}=-I_{B2}=15mA$			30	ns

Electrical Characteristic Curve



Marking Instructions



Note:

- H: Company Code
- 2X: Product Type Code

Packaging SPEC.

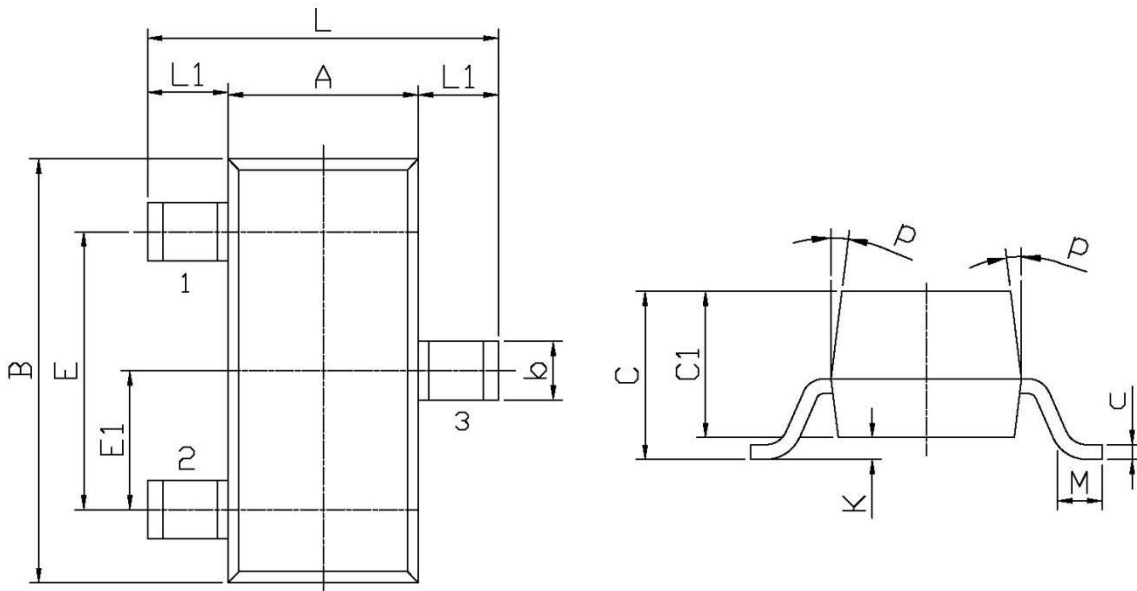
REEL INFORMATION

Package Type	Units					Dimension (unit: mm <sup>3</sup> )		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-23	3,000	10	30,000	6	180,000	7" x8	180×120×180	390×385×205

Package Outline Dimensions

SOT-23

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			