

**Description**

Silicon NPN transistor in a SOT-23 Plastic Package

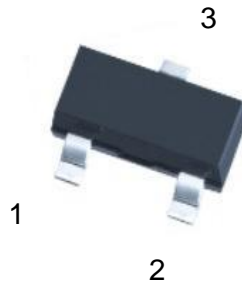
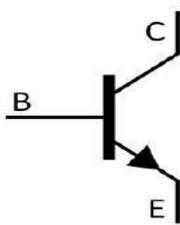
**Applications**

General power amplifier and switching application

**Features**

- High voltage
- complementary pair with CTBC857M
- Halogen-free product

Symbol	Parameter	Max	Unit
$V_{CE0}$	collector-emitter voltage	45	V
$I_c$	collector current (DC)	100	mA

**Equivalent Circuit & Pinning**


PIN1: Base

PIN 2: Emitter

PIN 3: Collector

**hFE Classifications & Marking**

h <sub>FE</sub> Classifications Symbol	A	B	C
h <sub>FE</sub> Range	110~220	200~450	420~800
Marking	H1E	H1F	H1G

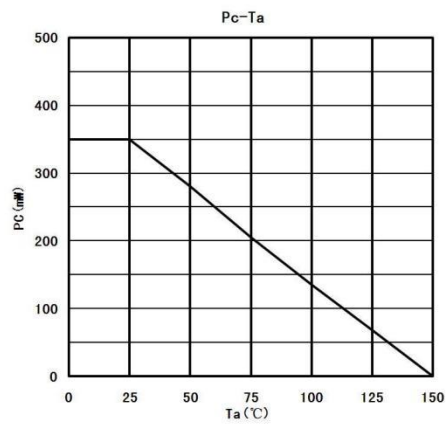
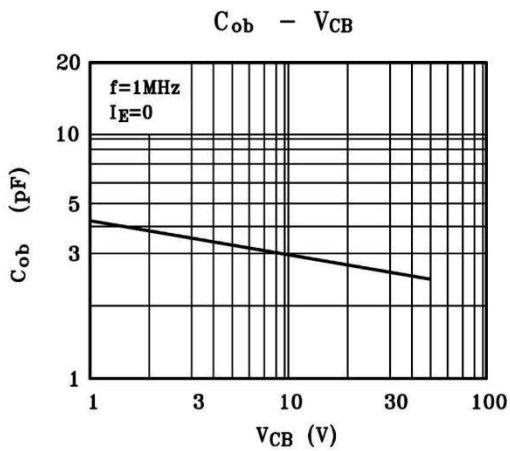
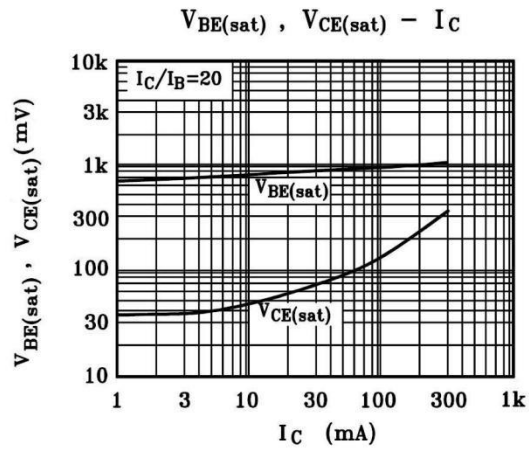
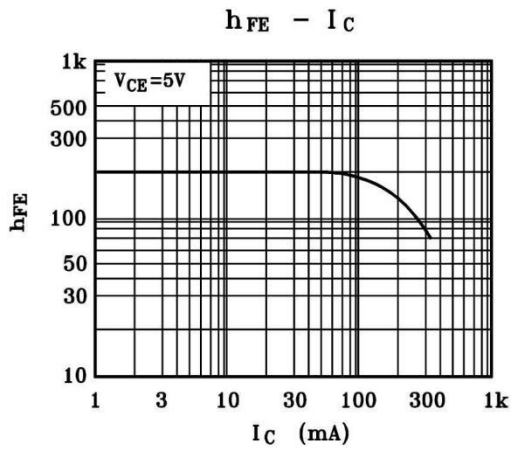
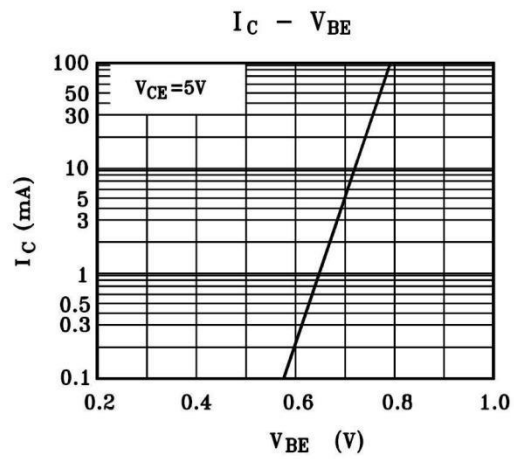
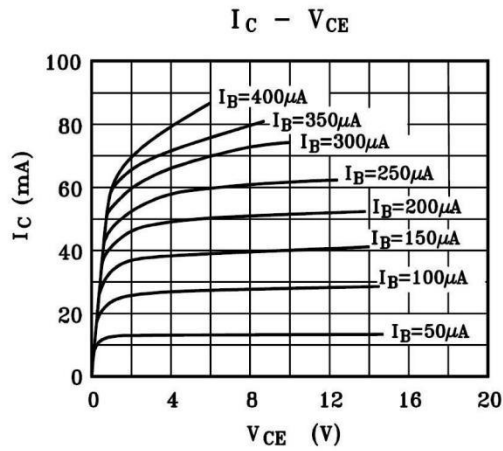
**Absolute Maximum Ratings(Ta=25°C)**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	50	V
Collector to Emitter Voltage	$V_{CEO}$	45	V
Emitter to Base Voltage	$V_{EBO}$	6.0	V
Collector Current - Continuous	$I_C$	100	mA
Collector Power Dissipation	$P_C$	350	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55~150	°C

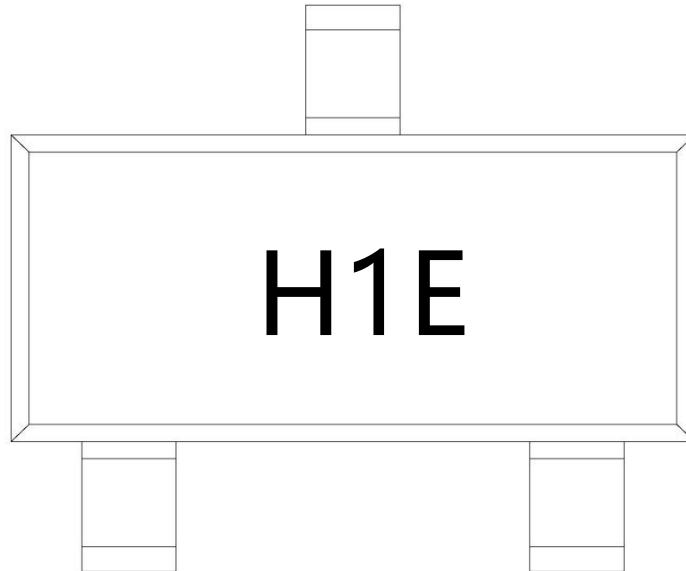
**Electrical Characteristics(Ta=25°C)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=30V$ $I_E=0$			0.015	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=5.0V$ $I_C=2.0mA$	110		800	
Collector to Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=10mA$ $I_B=0.5mA$		0.09	0.25	V
	$V_{CE(sat)2}$	$I_C=100mA$ $I_B=5.0mA$		0.2	0.6	V
Base to Emitter Saturation Voltage	$V_{BE(sat)1}$	$I_C=10mA$ $I_B=0.5mA$		0.7		V
	$V_{BE(sat)2}$	$I_C=100mA$ $I_B=5.0mA$		0.9		V
Base to Emitter Voltage	$V_{BE(on)1}$	$V_{CE}=5.0V$ $I_C=2.0mA$	0.58		0.7	V
	$V_{BE(on)2}$	$V_{CE}=5.0V$ $I_C=10mA$			0.75	V
Transition Frequency	$f_T$	$V_{CE}=5.0V$ $I_C=10mA$ $f=100MHz$		300		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10V$ $I_E=0$ $f=1.0MHz$		2.5	4.5	pF
Noise Figure	NF	$V_{CE}=6.0V$ $I_C=0.1mA$ $R_g=10K\Omega$ $f=1.0KHz$		1.0	10	dB

Electrical Characteristic Curve



Marking Instructions



Note:

H: Company Code.

1E: Product Type Code

$h_{FE}$ Classifications Symbol	A	B	C
$h_{FE}$ Range	110~220	200~450	420~800
Marking	H1E	H1F	H1G

Packaging SPEC.

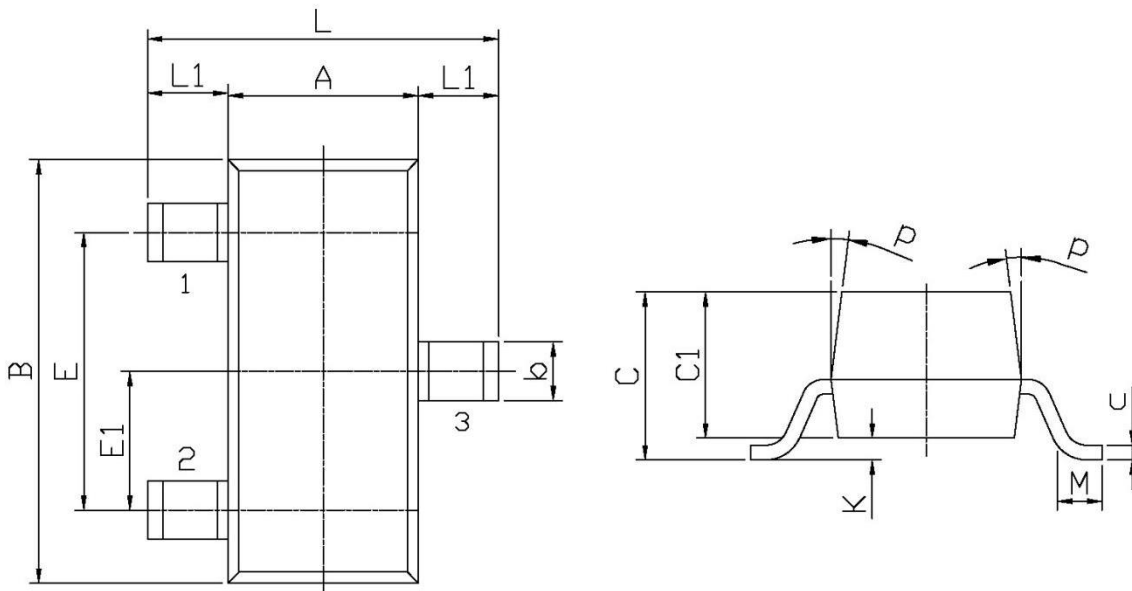
REEL INFORMATION

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	180x120x180	390x385x205

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			