

**/ Descriptions**

Silicon PNP transistor in a SOT-23 Plastic Package.

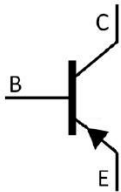
**/ Features**

Large current capacity, low collector to emitter saturation voltage very small-sized package permitting sets to be made smaller and slimer.

**/ Applications**

AF power amplifie,medium-speed switching, small-sized motor drivers.

**/ Equivalent Circuit**



**/ Pinning**



PIN 1 Base      PIN 2 Emitter      PIN 3 Collector

**/  $h_{FE}$  Classifications & Marking**

$h_{FE}$ Classifications Symbol	Q	P	K
$h_{FE}$ Range	135~270	200~400	300~600
Marking	HULQ	HULP	HULK

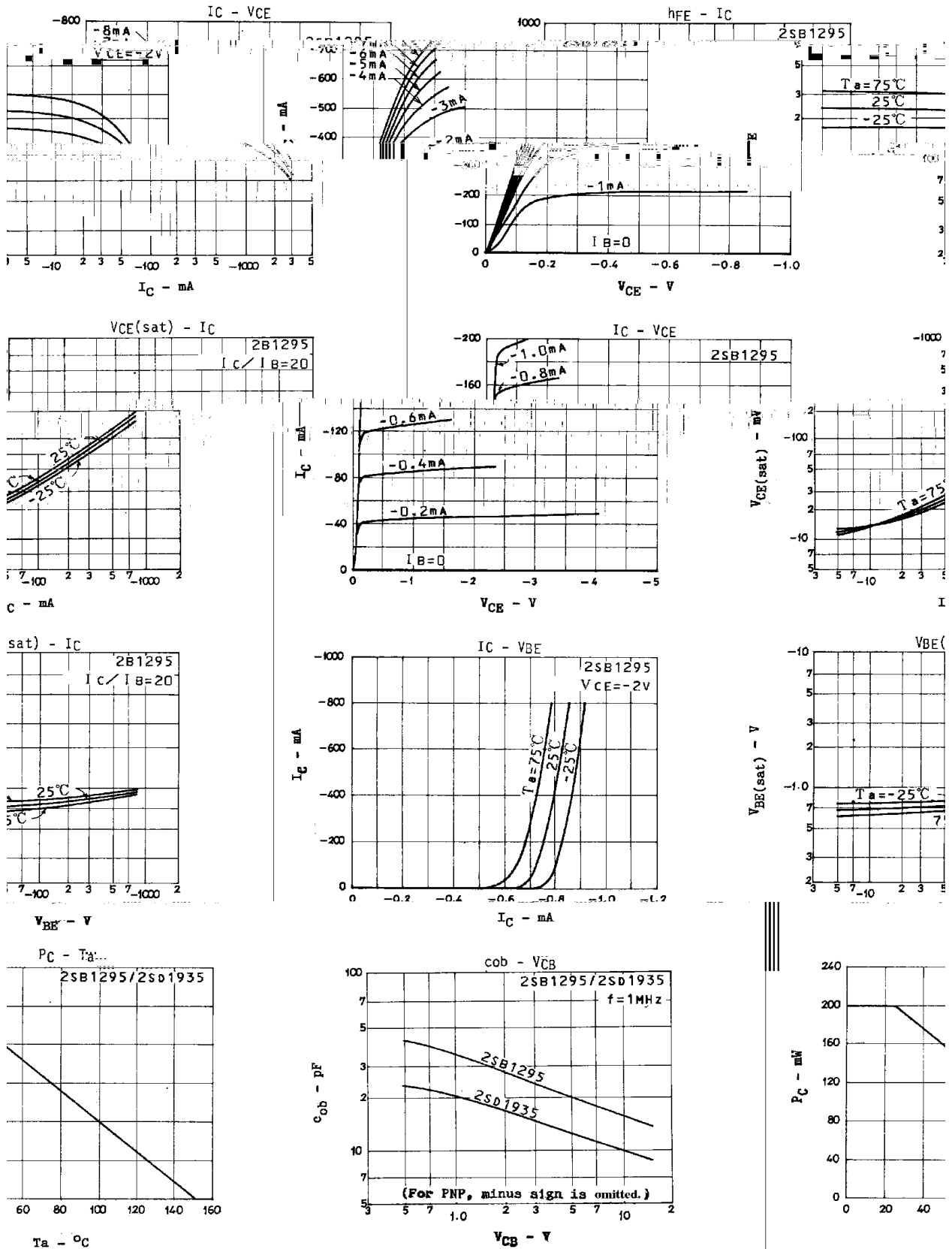
**/ Absolute Maximum Ratings(Ta=25 )**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	-15	V
Collector to Emitter Voltage	$V_{CEO}$	-15	V
Emitter to Base Voltage	$V_{EBO}$	-5.0	V
Collector Current	$I_C$	-800	mA
Collector Current(Pulse)	$I_{CP}$	-3.0	A
Collector Power Dissipation	$P_C$	200	mW
Junction Temperature	$T_j$	150	
Storage Temperature Range	$T_{stg}$	-55~150	

**/ Electrical Characteristics(Ta=25 )**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C=-10\mu A$ $I_B=0$	-15			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=-1.0mA$ $R_{BE}=\infty$	-15			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=-10\mu A$ $I_C=0$	-5.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=-12V$ $I_E=0$			-0.1	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{CE}=-4.0V$ $I_B=0$			-0.1	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-2.0V$ $I_C=-50mA$	135		600	
	$h_{FE(2)}$	$V_{CE}=-2.0V$ $I_C=-800mA$	80			
Collector to Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=-5.0mA$ $I_B=-0.5mA$		-0.01	-0.025	V
	$V_{CE(sat)(2)}$	$I_C=-400mA$ $I_B=-20mA$		-0.1	-0.2	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-400mA$ $I_B=-20mA$		-0.9	-1.2	V
Transition Frequency	$f_T$	$V_{CB}=-2.0V$ $I_C=-50mA$		300		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=-10V$ $f=1.0MHz$		15		pF

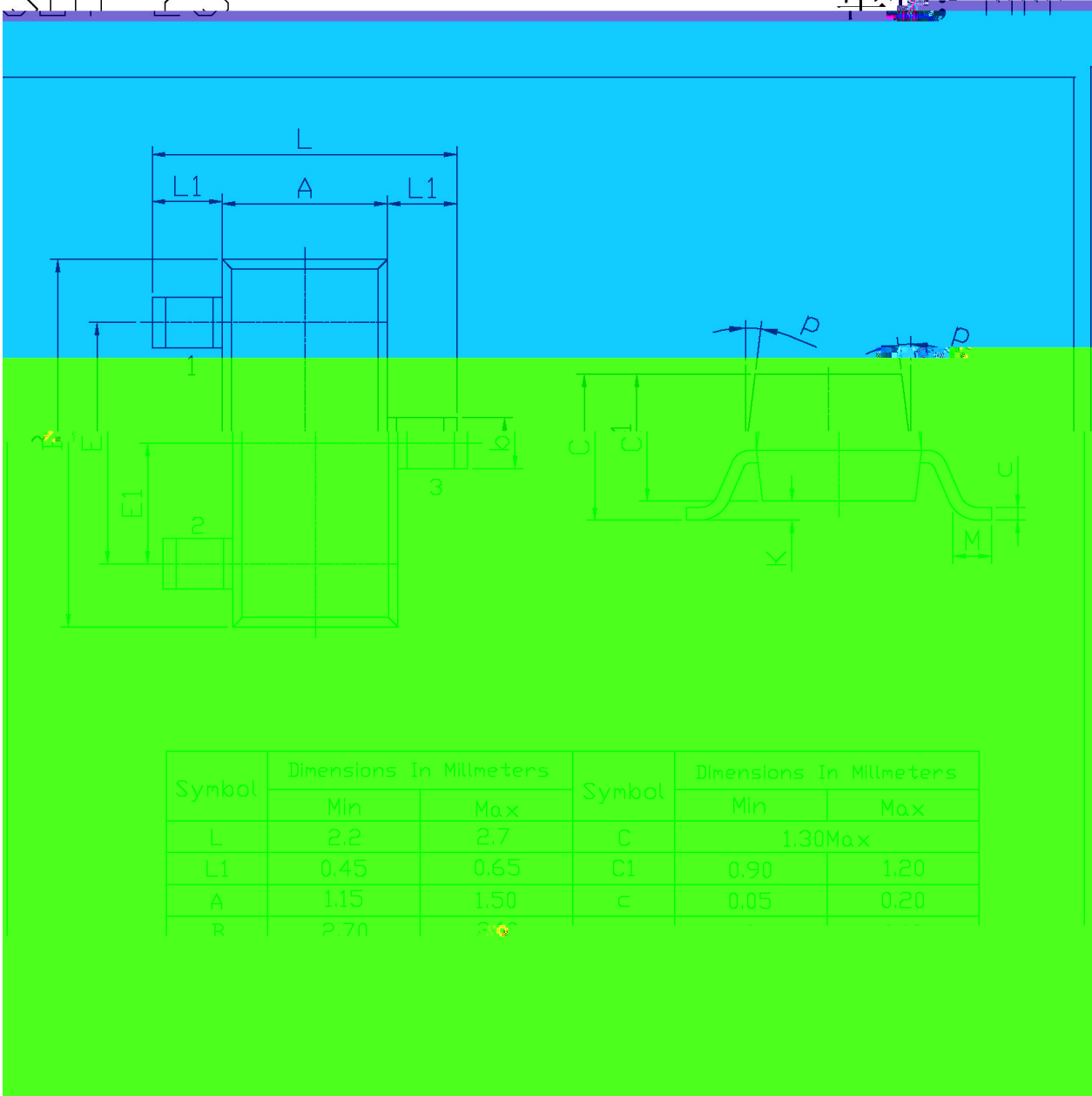
/ Electrical Characteristic Curve



/ Package Dimensions

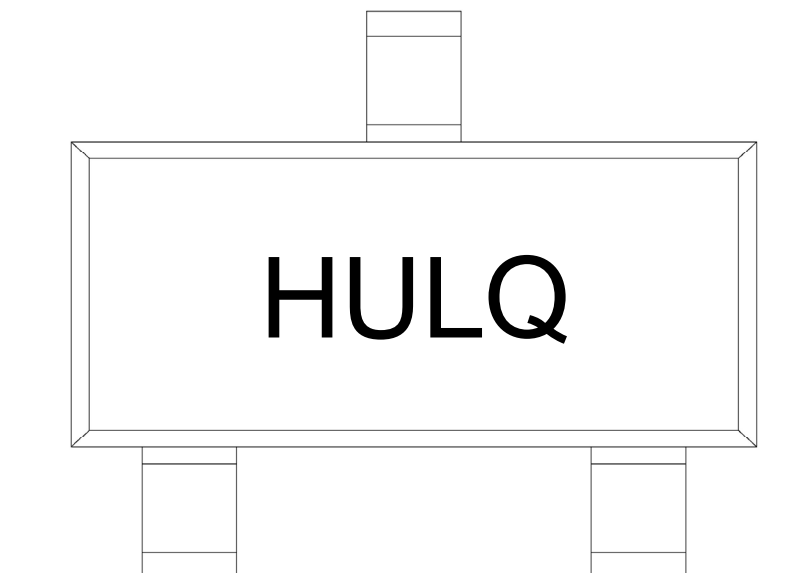
SOT-23

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
R	2.70	3.00			

/ Marking Instructions



UL

Q  $h_{FE}$

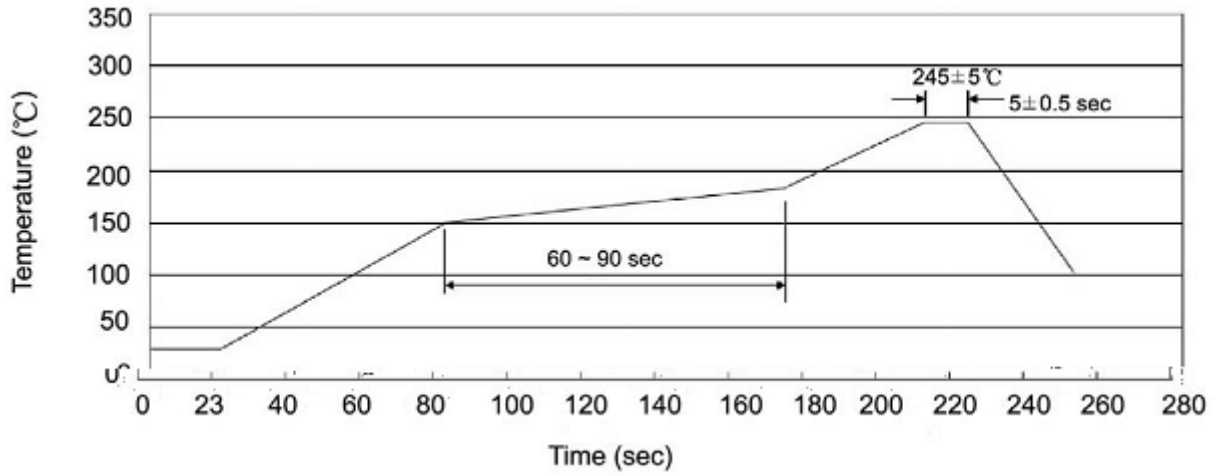
Note:

Company Code

UL Product Type Code

Q  $h_{FE}$  Classifications Symbol Code

( ) /



Note:

- |   |     |     |    |          |                                         |
|---|-----|-----|----|----------|-----------------------------------------|
| 1 | 25  | 150 | 60 | 90sec;   | 1.Preheating:25~150 , Time:60~90sec.    |
| 2 | 245 | 5   | 5  | 0.5sec;  | 2.Peak Temp.:245 5 , Duration:5 0.5sec. |
| 3 |     |     | 2  | 10 /sec. | 3. Cooling Speed: 2~10 /sec.            |

/ Resistance to Soldering Heat Test Conditions

260 5                      10 1 sec.                      Temp.:260±5                      Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm <sup>3</sup> )		
						"		

/ Notices