2SA684

Rev.D Nov.-2015

蓝箭电子 BLUE ROCKET ELECTRONICS

DATA SHEET

/ Descriptions

Silicon PNP transistor in a TO-92LM Plastic Package.

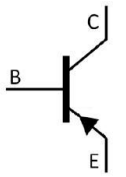
/ Features

Low $V_{CE(sat)}$,2 3W output in complementary pair with 2SC1384.

/ Applications

AF power amplifier and driver applications.

/ Equivalent Circuit



/ Pinning

PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	Q	R	S
h_{FE} Range	85~170	120~240	170~340

/ Absolute Maximum Ratings(Ta=25)

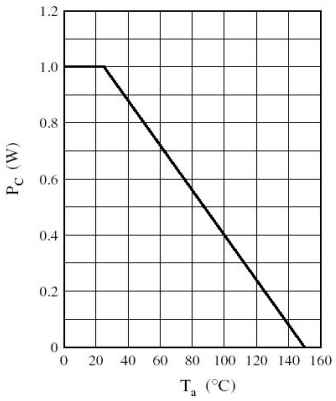
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-60	V
Collector to Emitter Voltage	V_{CEO}	-50	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-1.0	A
Collector Current – Continuous(Pulse)	I_{CP}	-1.5	A
Collector Power Dissipation	P_C	1.0	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 150	℃

/ Electrical Characteristics(Ta=25)

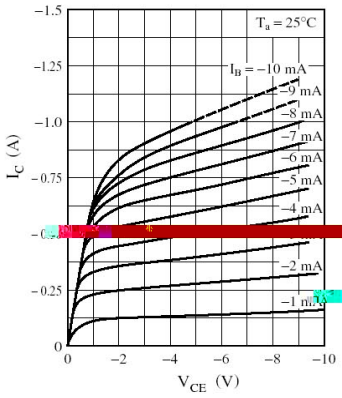
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=-10μA I_E=0	-60			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=-2.0mA I_B=0	-50			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=-10μA I_C=0	-5.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=-20V I_E=0			-0.1	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=-10V I_C=-500mA	85	160	340	
	$h_{FE(2)}$	V_{CE}=-5.0V I_C=-1.0A	50	100		
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-500mA I_B=-50mA		-0.2	-0.4	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=-500mA I_B=-50mA		-0.85	-1.2	V
Transition Frequency	f_T	V_{CE}=-10V I_C=-50mA		200		MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V I_E=0 f=1.0MHz		20	30	pF

/ Electrical Characteristic Curve

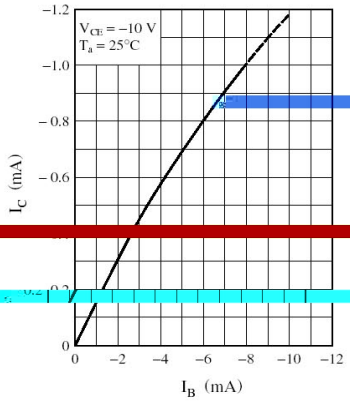
P_C — T_a



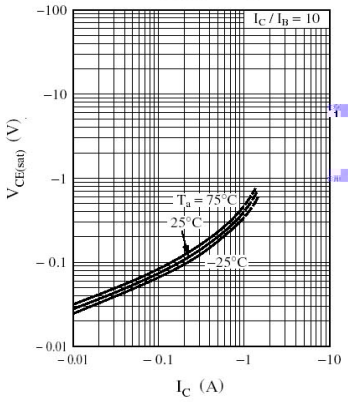
I_C — V_{CE}



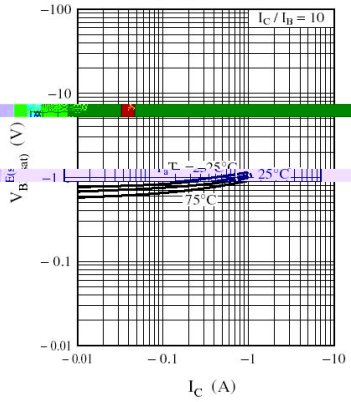
I_C — I_B



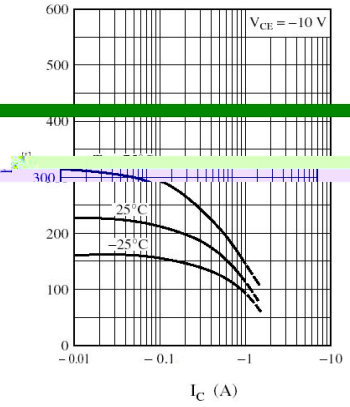
$V_{CE(sat)}$ — I_C



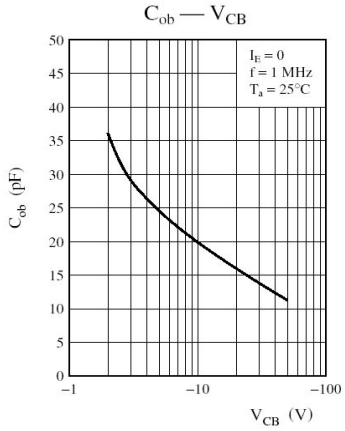
$V_{BE(sat)}$ — I_C



h_{FE} — I_C

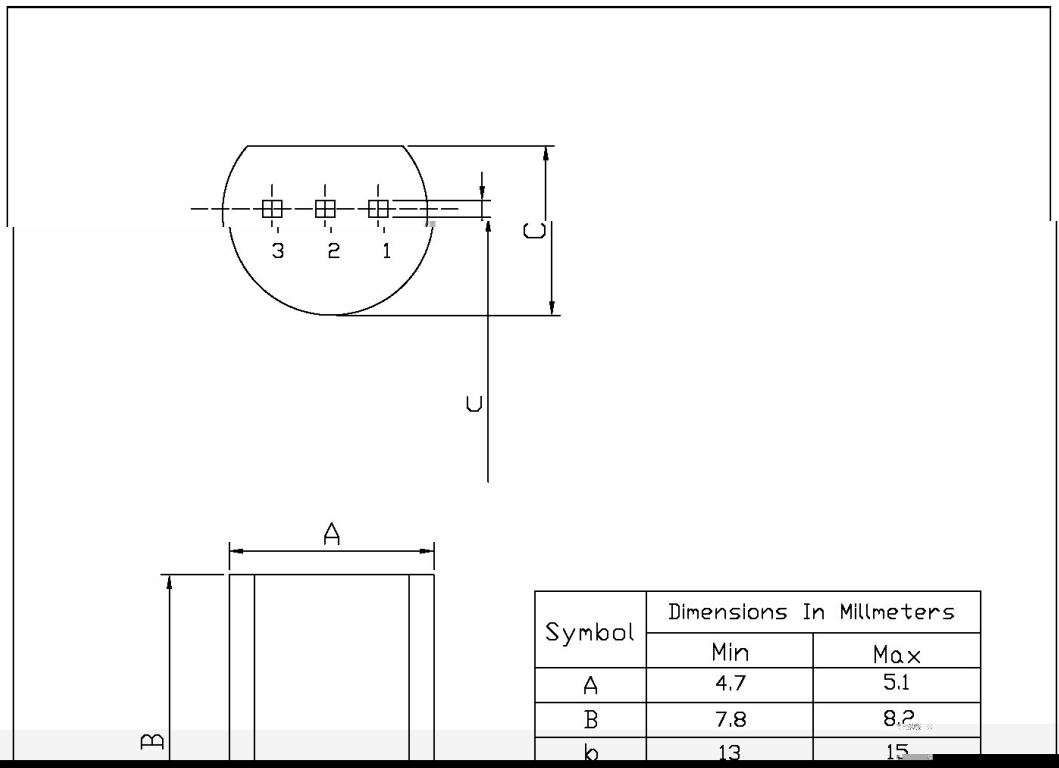


C_{ob} — V_{CB}



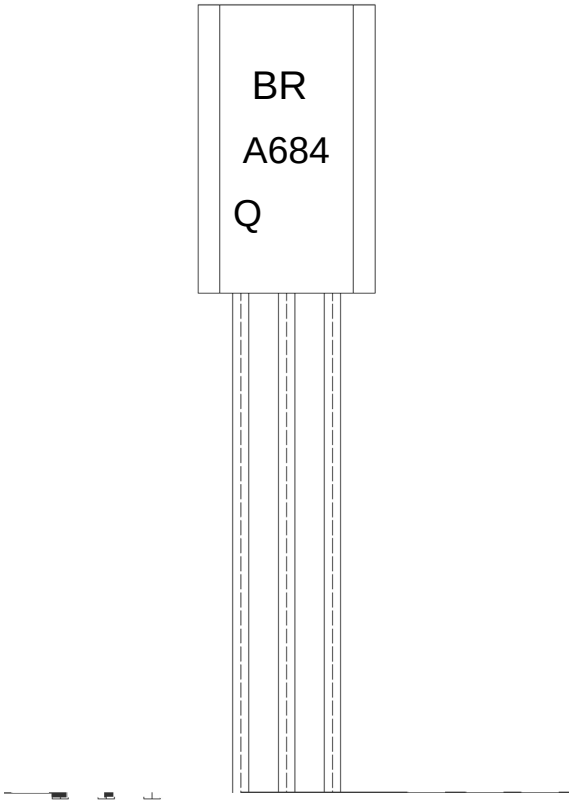
/ Package Dimensions

TO-92LM Unit: mm



Symbol	Dimensions In Millmeters	
	Min	Max
A	4.7	5.1
B	7.8	8.2
b	13	15

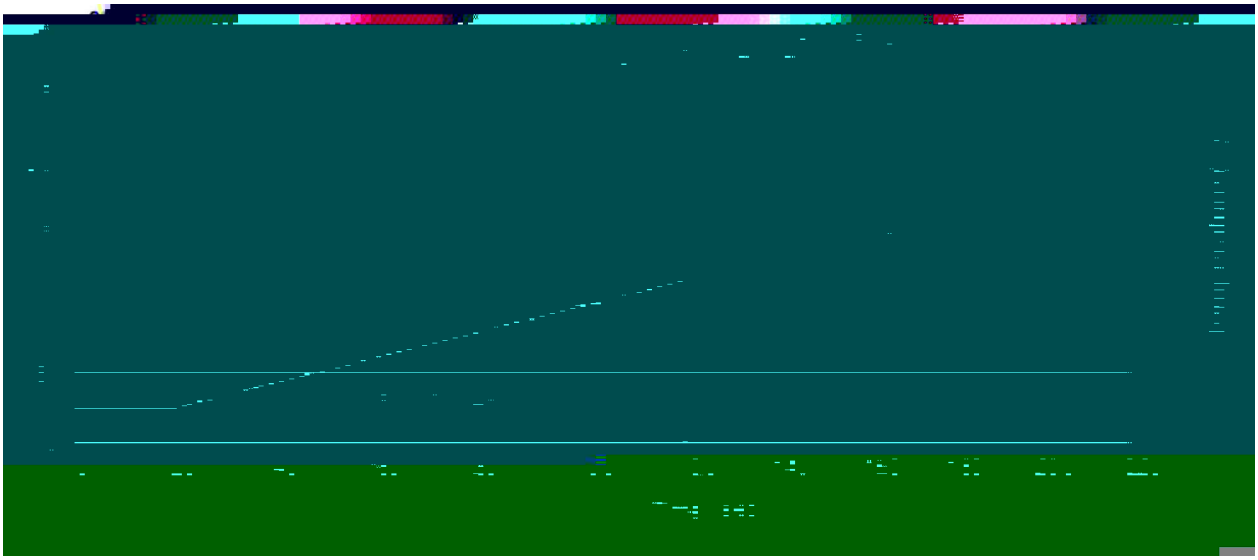
/ Marking Instructions



Note:

BR:	Company Code.
A684:	Product Type.
Q:	h_{FE} Classifications Symbol
****:	Lot No. Code,code change with Lot No.

( ) / Temperature Profile for Dip Soldering(Pb-Free)



	Note:
1 25 150 60 90sec;	1.Preheating:25~150 , Time:60~90sec.
2 255 5 5 0.5sec;	2.Peak Temp.:255 5 , Duration:5 0.5sec.
3 2 10 /sec.	3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

270 5	10 1 sec.	Temp.:270 5	Time:10 1 sec

/ Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)		
	只 袋	袋 盒	只 盒	盒 箱	只 箱	袋	盒	箱

/ AMMO

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)	
	只 纸带	纸带 盒	纸带层 盒	盒 箱	只 箱	盒	箱
							小箱 大箱

/ Notices