/ Descriptions

SOT-23 PNP Silicon PNP transistor in a SOT-23 Plastic Package.

/ Features

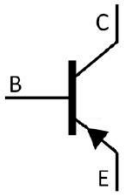
500mA AEC-Q101

Collector currents up to 500 mA, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

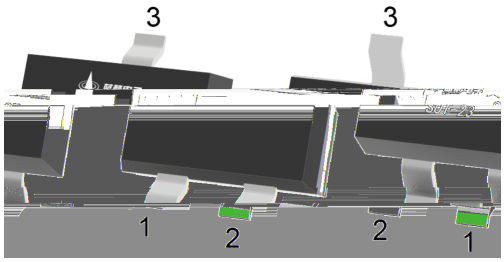
/ Applications

General purpose amplifier and switch requiring, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning



PIN 1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h_{FE} Range	100 300
Marking	2TQ

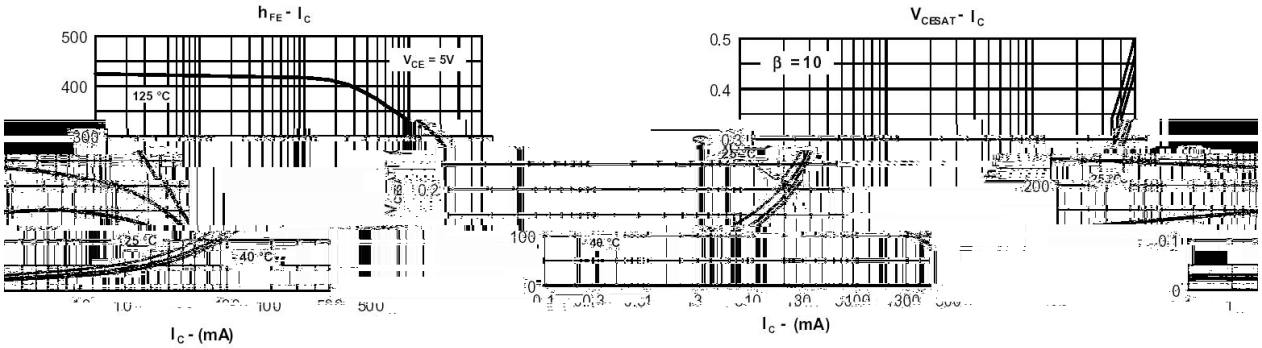
/ Absolute Maximum Ratings(Ta=25)

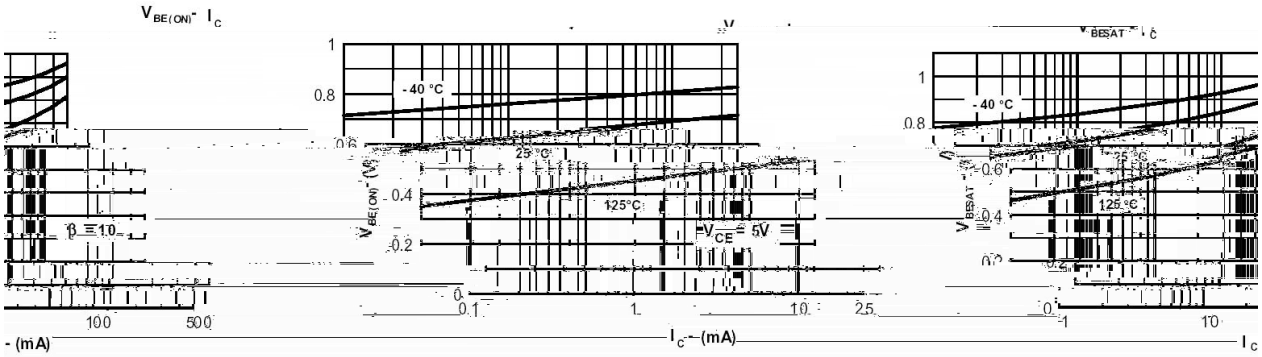
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-40	V
Collector to Emitter Voltage	V_{CEO}	-40	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current	I_C	-600	mA
Collector Power Dissipation	P_C	350	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 150	℃

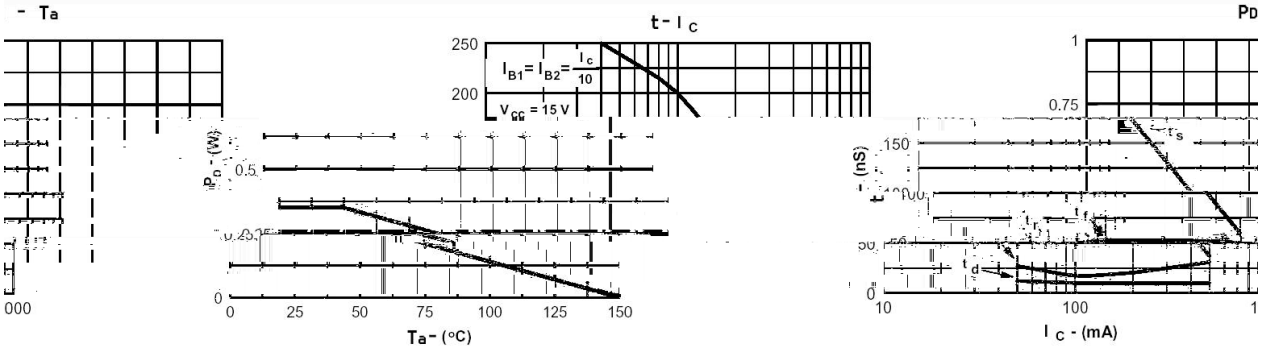
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=-0.1mA I_E=0	-40			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=-1.0mA I_B=0	-40			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=-0.1mA I_C=0	-5.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=-40V I_E=0			-50	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=-5.0V I_C=0			-50	nA
DC Current Gain	$h_{FE(1)}$	V_{CE}=-2.0V I_C=-150mA	100		300	
	$h_{FE(2)}$	V_{CE}=-1.0V I_C=-0.1mA	30			
	$h_{FE(3)}$	V_{CE}=-1.0V I_C=-1.0mA	60			
	$h_{FE(4)}$	V_{CE}=-1.0V I_C=-10mA	100			
	$h_{FE(5)}$	V_{CE}=-2.0V I_C=-500mA	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	-0.75		-0.95	V
	$V_{BE(sat)\ (2)}$	I_C=-500mA I_B=-50mA			-1.3	V
Transition Frequency	f_T	V_{CE}=-10V I_C=-20mA f=100MHz	200			MHz
Delay Time	t_d	V_{CC}=-30V I_C=-150mA I_{B1}=-15mA			15	ns
Rise Time	t_r				20	ns
Storage Time	t_s	V_{CC}=-30V I_C=-150mA I_{B1}=I_{B2}=-15mA			225	ns
Fall Time	t_f				30	ns

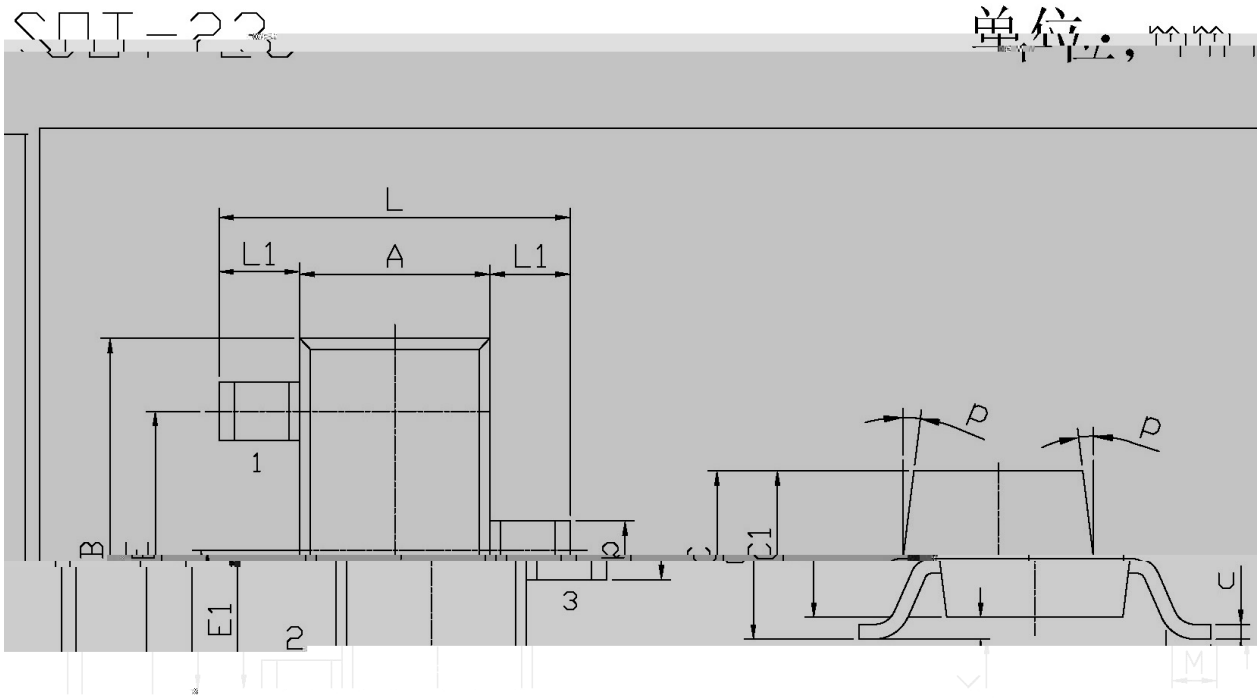
/ Electrical Characteristic Curve





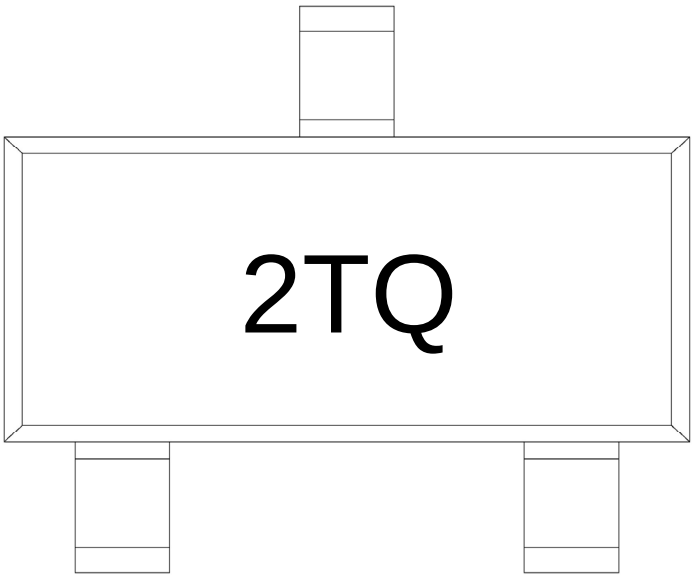


/ Package Dimensions



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	

/ Marking Instructions



2T

Q

Note:

2T	Product Type Code
Q:	Automobile halogen-free product Code

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)

Note:

1		150	200		60	120sec;	1.Preheating:150~200 , Time:60~120sec.
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.