Description

Silicon NPN and PNP transistor in a SOT-363 Plastic Package

Applications

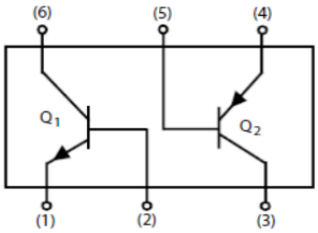
General purpose amplifier and switching

Features

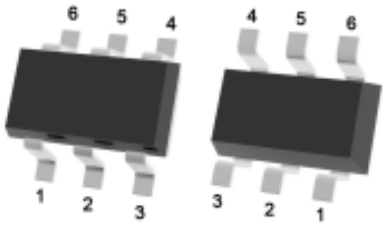
- High DC Current Gaint
- Low Collector to Emitter Saturation Voltage
- Halogen-free Product

Symbol	Parameter	Max	Unit
V_{CEO}	collector-emitter voltage	160	V
I_C	collector current (DC)	200	mA

Equivalent Circuit & Pinning



Q1: NPN Q2: PNP



PIN 1、4：Emitter PIN 2、5：Base PIN 3、6：Collector

Absolute Maximum Ratings(Ta=25℃) (Q1:NPN)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	180	V
Collector to Emitter Voltage	V_{CEO}	160	V
Emitter to Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	200	mA
Power Dissipation	P_D	200	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	℃/W
Junction and Storage Temperature	T_j, T_{stg}	-55～+150	℃

Absolute Maximum Ratings(Ta=25℃) (Q2:PNP)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-180	V
Collector to Emitter Voltage	V_{CEO}	-160	V
Emitter to Base Voltage	V_{EBO}	-6.0	V
Collector Current	I_C	-200	mA
Power Dissipation	P_D	200	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	℃/W
Junction and Storage Temperature	T_j, T_{stg}	-55～+150	℃

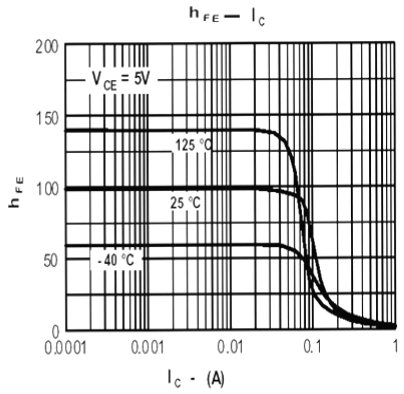
Electrical Characteristics(Ta=25℃)(Q1:PNP)

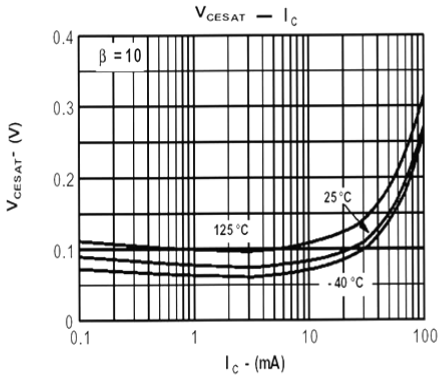
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	V_{CB}=180V I_E=0			0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=6.0V I_C=0			0.1	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=5.0V I_C=10mA	50	200	400	
	$h_{FE(2)}$	V_{CE}=5.0V I_C=50mA	20	160		
	$h_{FE(3)}$	V_{CE}=5.0V I_C=1.0mA	40	190		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$ (1)	I_C=10mA I_B=1.0mA		0.06	0.15	V
	$V_{CE(sat)}$ (2)	I_C=50mA I_B=5.0mA		0.09	0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$ (1)	I_C=10mA I_B=1.0mA		0.7	1.0	V
	$V_{BE(sat)}$ (2)	I_C=50mA I_B=5.0mA		0.8	1.0	V
Base-Emitter Voltage	V_{BE}	V_{CE}=5.0V I_C=10mA		0.68	0.75	V
Transition Frequency	f_T	V_{CE}=10V I_C=10mA	50	110		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V I_E=0 f=1.0MHz		2.2	5.0	pF
Turn-on Time	t_{on}	I_C=100mA I_{B1}=-I_{B2}=10mA		0.3		μs
Turn-off Time	t_{off}			0.4		μs
Storage Time	t_{stg}			0.2		μs

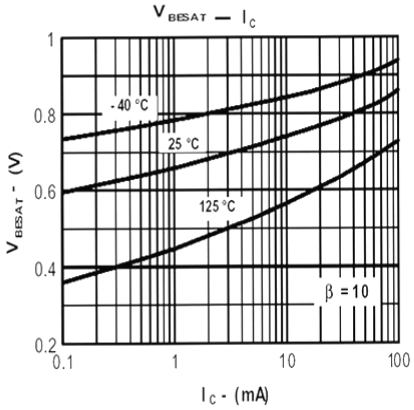
Electrical Characteristics(Ta=25℃)(Q2:PNP)

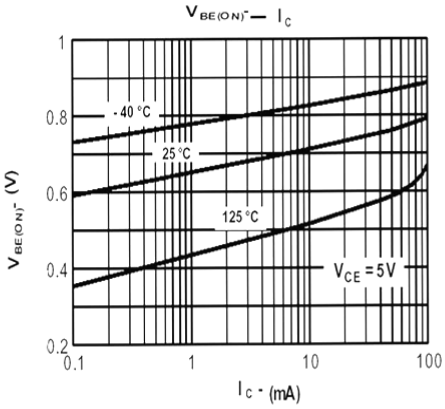
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	V_{CB}=-180V I_E=0			-0.1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=-6.0V I_C=0			-0.1	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=-5.0V I_C=-10mA	50	200	400	
	$h_{FE(2)}$	V_{CE}=-5.0V I_C=-50mA	20	70		
	$h_{FE(3)}$	V_{CE}=-5.0V I_C=-1.0mA	40	180		
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)}$	I_C=-10mA I_B=-1.0mA		-0.12	-0.4	V
	$V_{CE(sat)(2)}$	I_C=-50mA I_B=-5.0mA		-0.5	-0.8	V
Base-Emitter Saturation Voltage	$V_{BE(sat)(1)}$	I_C=-10mA I_B=-1.0mA		-0.75	-1.0	V
	$V_{BE(sat)(2)}$	I_C=-50mA I_B=-5.0mA		-0.8	-1.0	V
Base-Emitter Voltage	V_{BE}	V_{CE}=-5.0V I_C=-10mA		-0.7	-0.75	V
Transition Frequency	f_T	V_{CE}=-10V I_C=-10mA	50	80		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V I_E=0 f=10MHz		2.5	5.0	pF
Turn-on Time	t_{on}	I_C=-100mA $-I_{B1}=I_{B2}$=-10mA		0.1		μs
Storage Time	t_{off}			0.2		μs
Fall Time	t_{stg}			0.1		μs

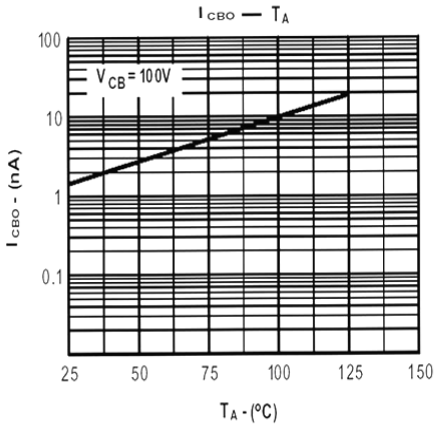
Electrical Characteristic Curve (Q1:NPN)

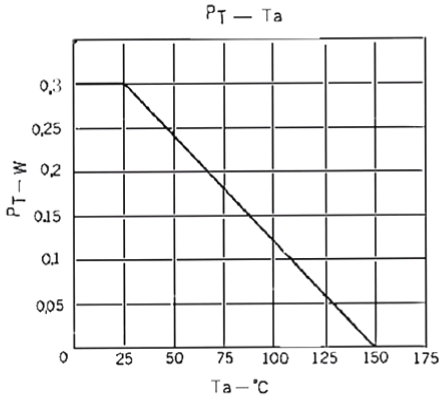




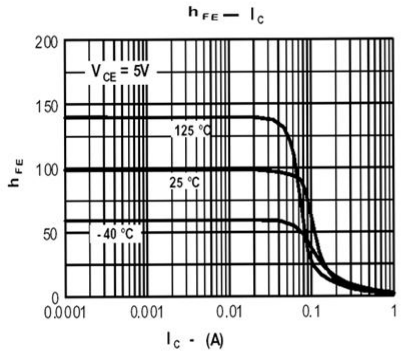


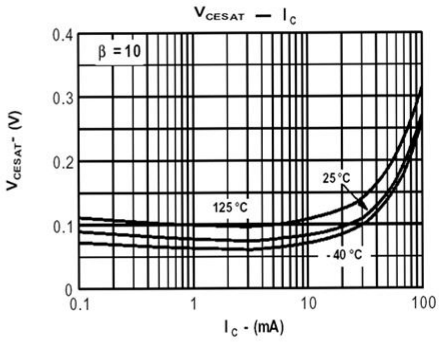


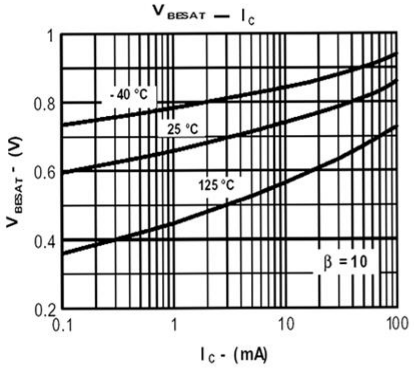


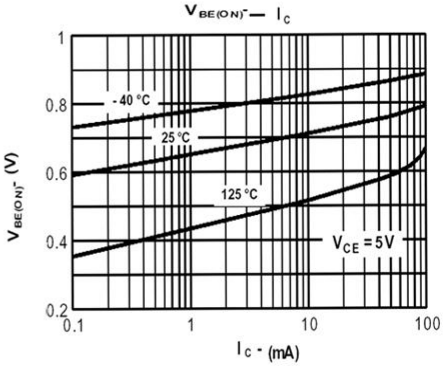


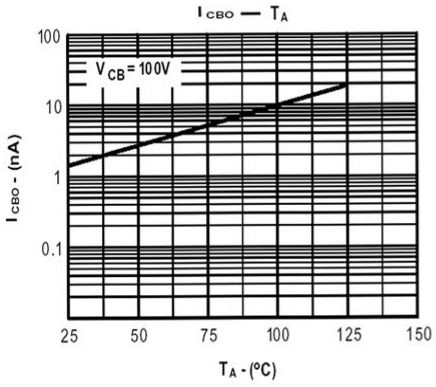
Electrical Characteristic Curve (Q2:NPN)

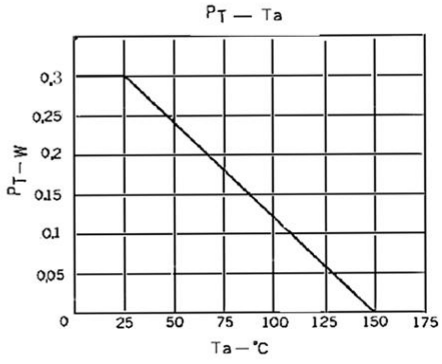




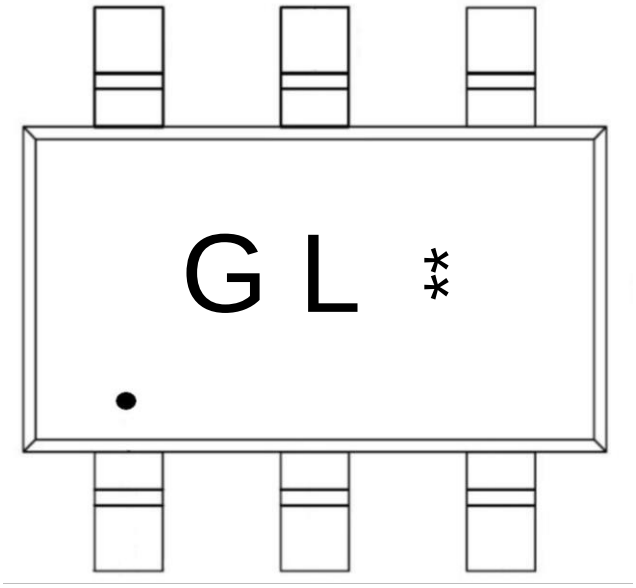








Marking Instructions



Note:

● ： “1”Pin

GL： Product Type Code

***: Lot No. Code, code change with Lot No.

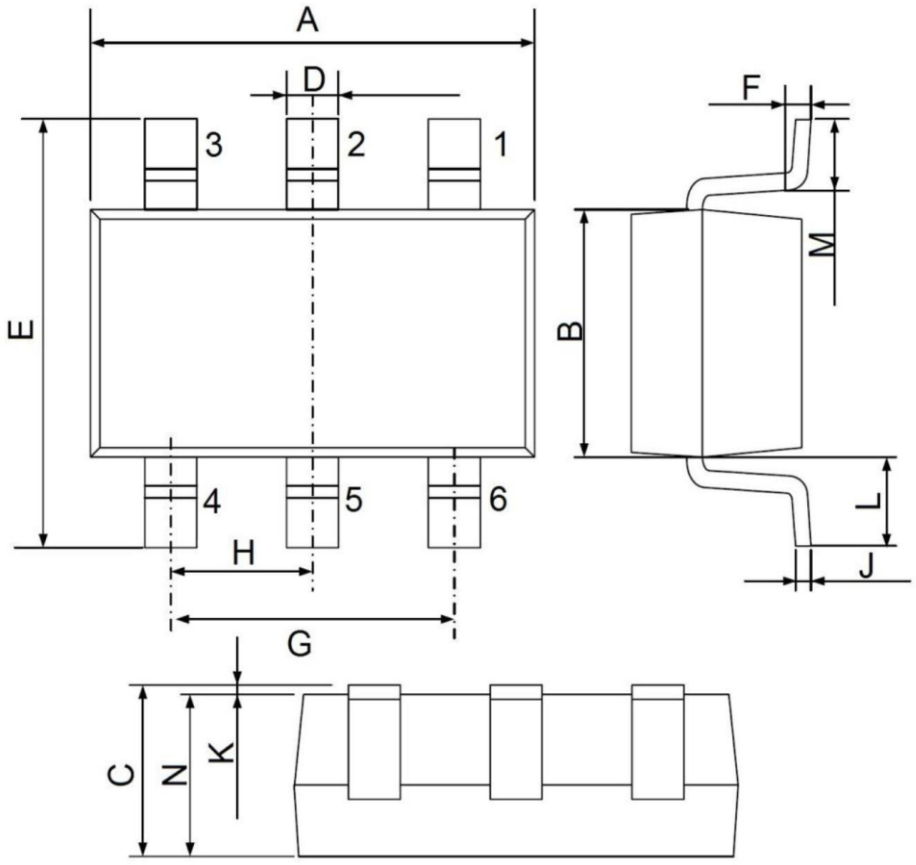
Packaging SPEC.

REEL INFORMATION

Package Type	Units					Dimension (unit：mm³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-363	3,000	10	30,000	6	180,000	7″ ×8	180×120×180	390×385×205

Package Outline Dimensions

SOT-363-6L



UNIT: mm

DIM	MIN	MAX
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	1.95	2.25
F	0.20 Typ.	
G	1.20	1.40
H	0.65 Typ.	
J	0.08	0.15
K	0.00	0.10
L	0.525 Ref.	
M	0.26	0.46
N	0.90	1.10