



SSC114EGSG

Dual NPN+PNP Digital Transistor

➤ Features

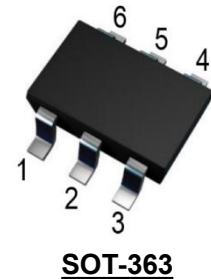
NPN:

VCC	VIN	IO	R1	R2
50V	-10~+40V	50mA	10KΩ	10KΩ

PNP:

VCC	VIN	IO	R1	R2
-50V	-40~+10V	-50mA	10KΩ	10KΩ

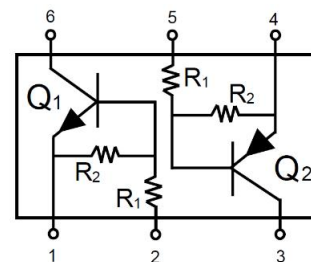
➤ Pin configuration



SOT-363

➤ Description

The dual NPN+PNP transistor is composed of a NPN and a PNP. The device is housed in the SOT-363 package, which is designed for low power amplification and switching.



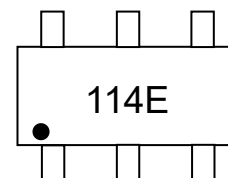
Circuit Diagram

➤ Applications

- General purpose switching and amplification
- Telephony and professional communication equipment

➤ Ordering Information

Device	Package	Shipping
SSC114EGSG	SOT-363	3000/Reel



Marking (Top View)

➤ **Absolute Maximum Ratings($T_A=25^{\circ}\text{C}$ unless otherwise noted)**

Parameter	Symbol	Q1	Q2	Unit
Supply Voltage	V_{CC}	50	-50	V
Input Voltage	V_{IN}	-10 to +40	-40 to +10	V
Output current	I_O	50	-50	mA
Power Dissipation	PD	150		mW
Junction Temperature	T_J	-55 to 150		$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to 150		$^{\circ}\text{C}$

➤ **Q1 Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)**

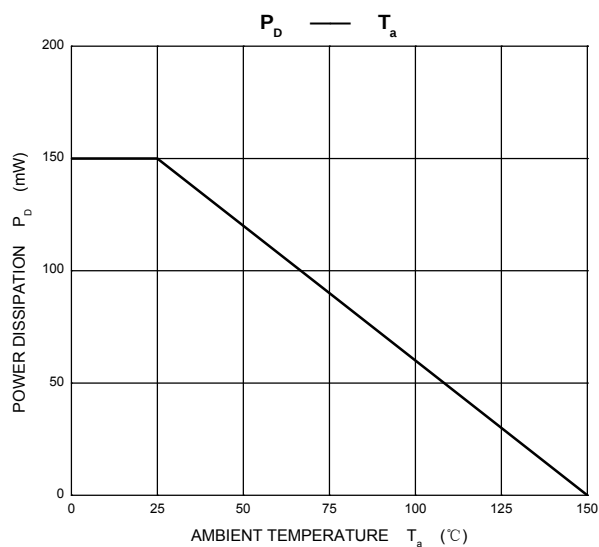
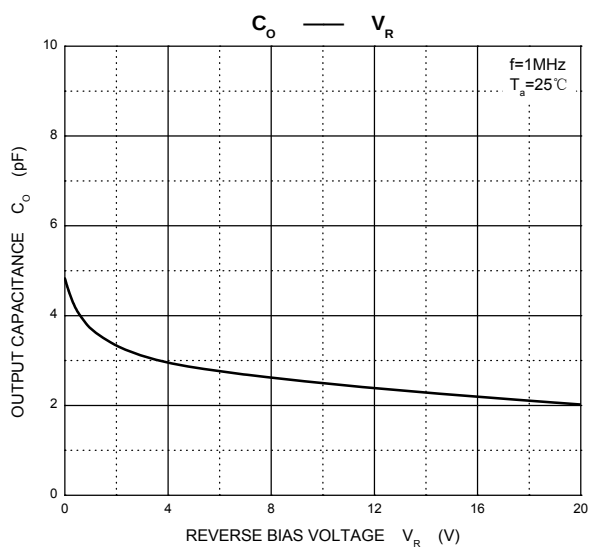
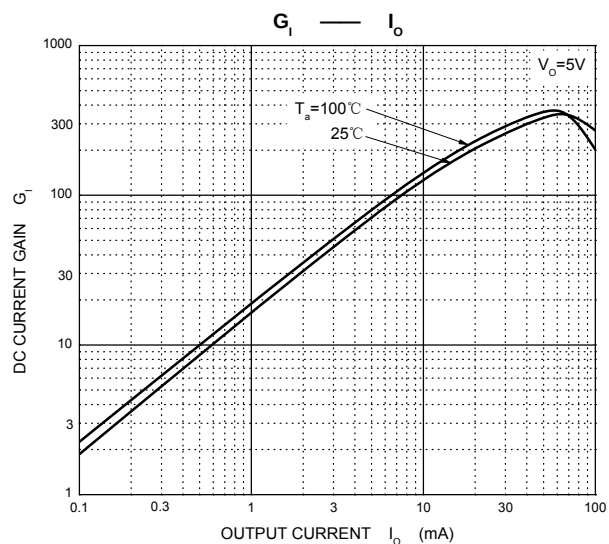
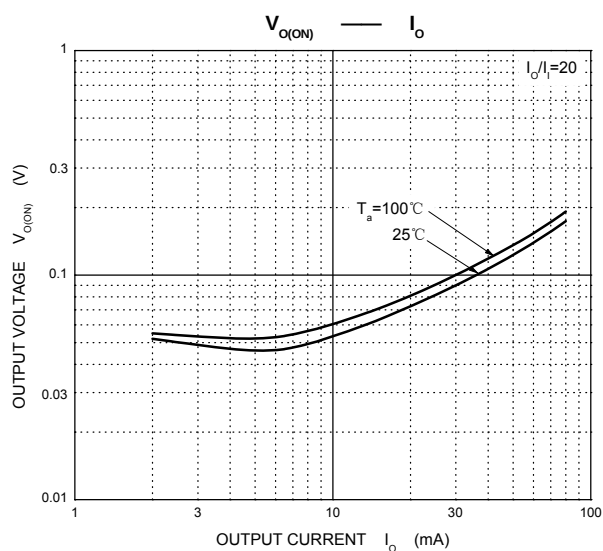
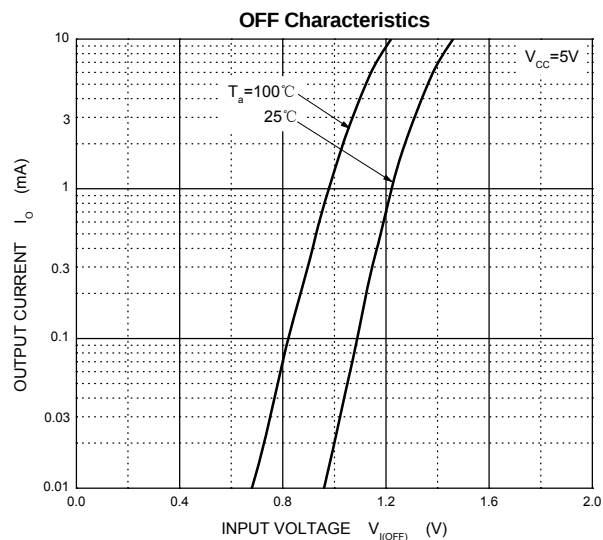
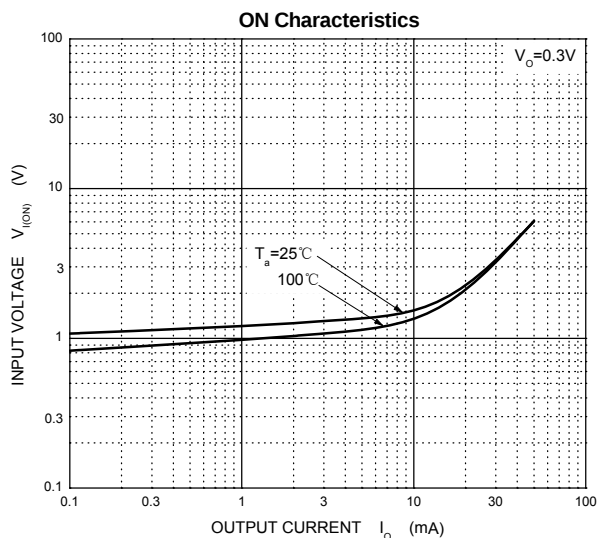
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	$V_{CC} = 5V, I_O=0.1mA$	0.5			V
	$V_{I(on)}$	$V_{CC} = 0.3V, I_O = 10mA$			3	V
Output Voltage	$V_{O(on)}$	$I_O/I_I = 10mA/0.5mA$			0.3	V
Input Current	I_I	$V_I = 5V$			0.88	mA
Output Current	$I_{O(off)}$	$V_{CC} = 50V, V_I = 0V$			0.5	μA
DC Current Gain	G_1	$V_O = 5V, I_O = 5mA$	30			
Input Resistance	R_1		7	10	13	$K\Omega$
Resistance Ration	R_2/R_1		0.8	1.0	1.2	
Transition Frequency	f_T	$V_O=10V, I_O=5mA, f=100MHz$		250		MHz

➤ **Q2 Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)**

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{I(off)}$	$V_{CC} = -5V, I_O= -0.1mA$	-0.5			V
	$V_{I(on)}$	$V_{CC} = -0.3V, I_O = -10mA$			-3	V
Output Voltage	$V_{O(on)}$	$I_O/I_I = -10mA/-0.5mA$			-0.3	V
Input Current	I_I	$V_I = -5V$			-0.88	mA
Output Current	$I_{O(off)}$	$V_{CC} = -50V, V_I = 0V$			-0.5	μA
DC Current Gain	G_1	$V_O = -5V, I_O = -5mA$	30			
Input Resistance	R_1		7	10	13	$K\Omega$
Resistance Ration	R_2/R_1		0.8	1.0	1.2	
Transition Frequency	f_T	$V_O= -10V, I_O= -5mA, f=100MHz$		250		MHz

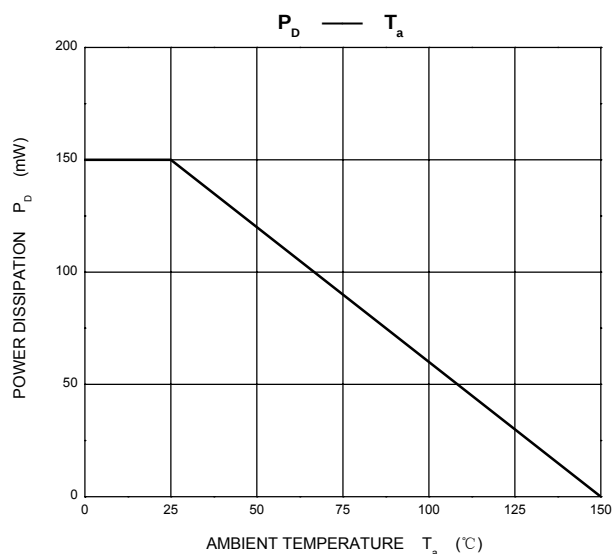
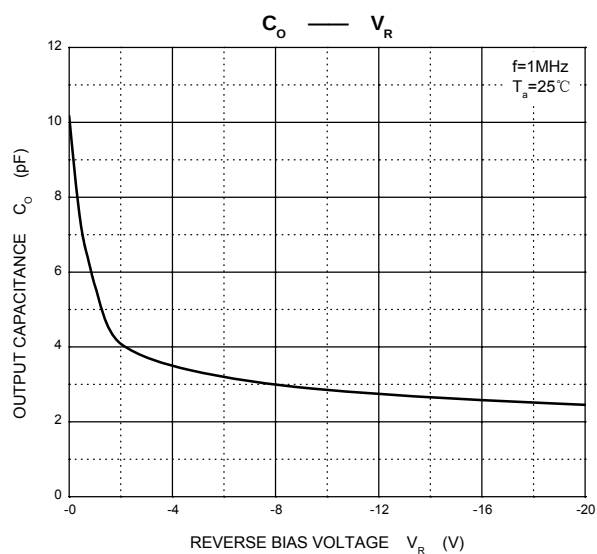
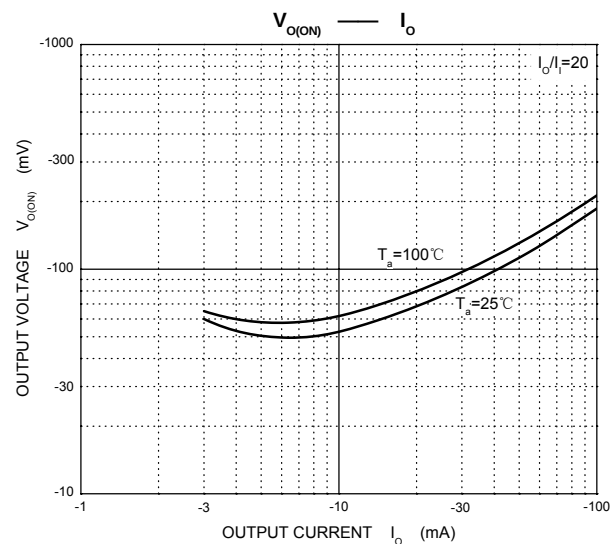
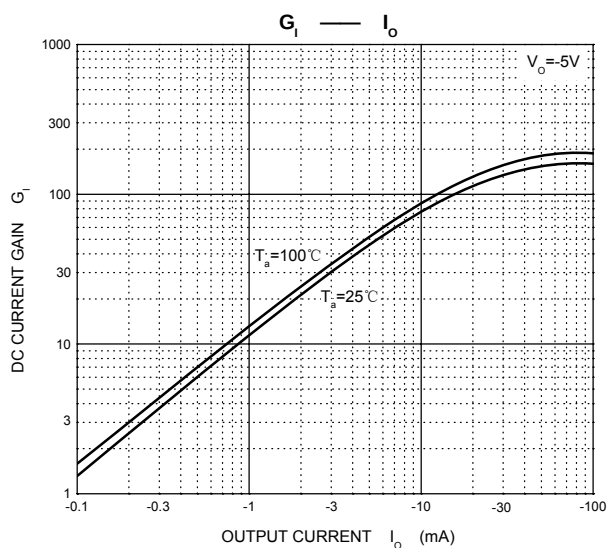
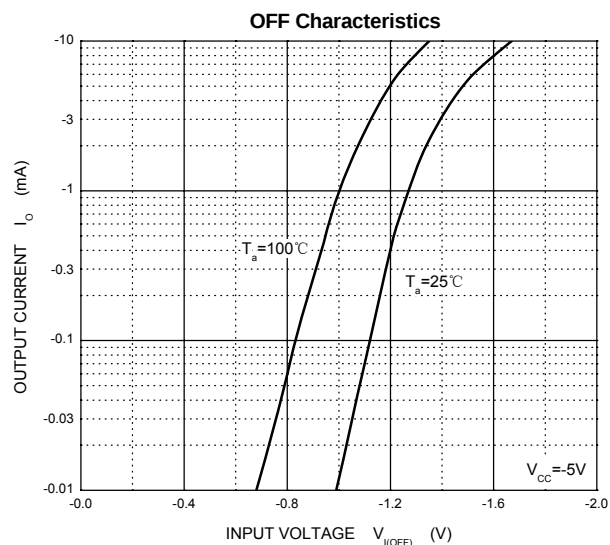
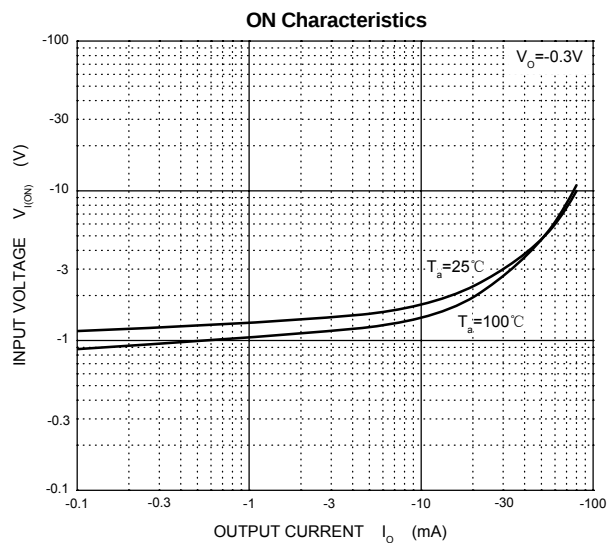


➤ Q1 Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



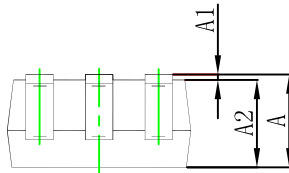
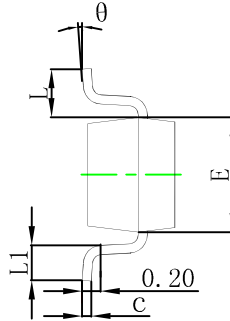
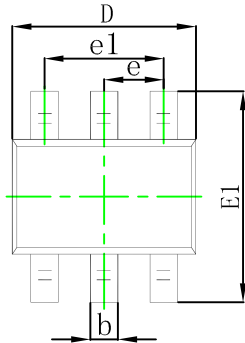


➤ Q2 Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



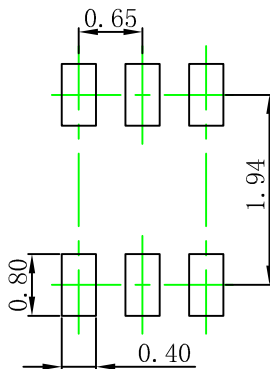
➤ Package Information

SOT-363



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-363 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



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