SSC8PN0GN2

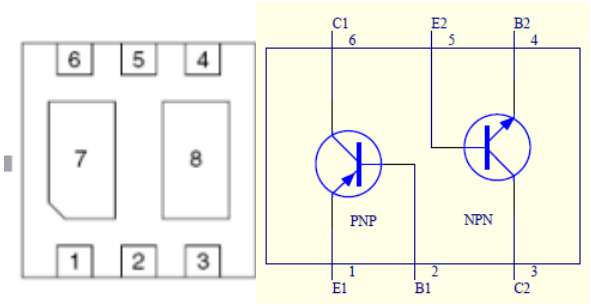
High Frequency High Gain PNP with NPN Power BJT

- **Features**

	V_{CE}	V_{BE}	$V_{CE(SAT)}$ typ	Ic
PNP BJT	-40V	-6V	-150mV	-1A
NPN BJT	40V	6V	120mV	0.2A

- **Applications**
  - battery powered circuits
  - low in-line power dissipation circuits

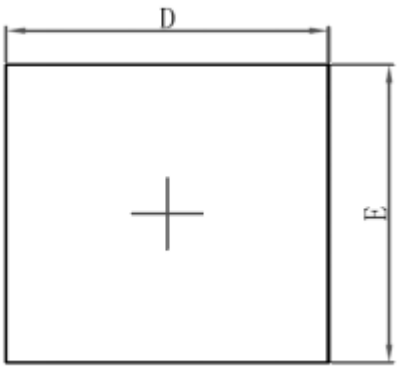
- **Pin configuration**



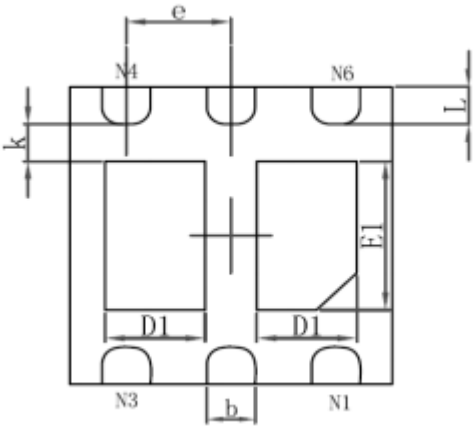
- **General Description**

SSC8PN0GN2 combines an Power NPN Transistor and a Power PNP Transistor . The tiny and thin outline saves PCB consumption.

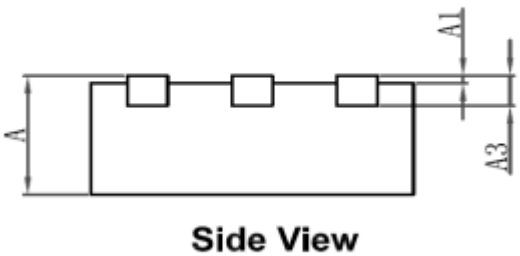
- **Package Information**



Top View



Bottom View



Side View

Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.700/0.800	0.800/0.900
A1	0.000	0.050
A3	0.203REF.	
D	1.924	2.076
E	1.924	2.076
D1	0.520	0.720
E1	0.900	1.100
k	0.200MIN.	
b	0.250	0.350
e	0.650TYP.	
L	0.174	0.326

DFN2X2X0.75

- **Absolute Maximum Ratings @ TA = 25°C unless otherwise specified**

Parameter	Symbol	P-channel	Unit
NPN Transistor			
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current (Note 1)	I_C	0.2	A
Pulse collector current(Note3)	I_{CM}	0.4	A
PNP Transistor			
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current (Note 1)	I_C	-1	A
Pulse collector current(Note3)	I_{CM}	-2	A
Power Dissipation and temperature			
Power Dissipation (Note 1)	P_c	1	W
Storage and Junction Temperature Range	T_J,	-55~+150	°C

- **Thermal resistance ratings**

Parameter	Symbol	Value	Unit
Junction-to-Ambient Thermal Resistance (Note 1)	$R_{\theta JA}$	115	°C/W
Junction-to-Ambient Thermal Resistance (Note 2)	$R_{\theta JA}$	220	°C/W

- **Order information**

Device	Package	Marking
SSC8PN0GN2	**DFN2X2-6**	PN0A ●

- **Electrical Characteristics @ TA = 25°C unless otherwise specified**

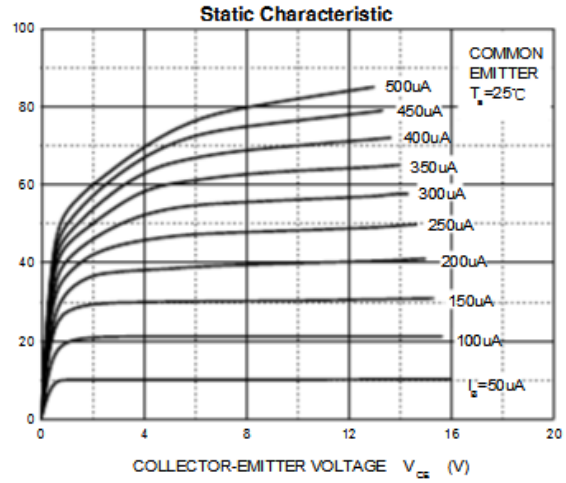
Parameter (Note 3)	Symbol	Test Conditions	Min	Typ	Max	Unit
NPN Transistor						
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=10uA，I_E=0mA	60			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA，I_B=0mA	40			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=10uA，I_C=0mA	6			V
Collector cut off current	I_{CBO}	V_{CB}=30V,I_E=0mA			90	nA
Emitter cut off current	I_{EBO}	V_{EB}=3,I_C=0mA			90	nA
DC Current Gain	HFE	V_{CE}=1V,I_C=-10mA	100		300	
DC Current Gain	HFE	V_{CE}=1V,I_C=100mA	30		300	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=50mA,I_B=5mA		0.12	0.3	V
Base-emitter saturation voltage	$V_{BE(SAT)}$	I_C=-50mA ,I_B=5mA			0.95	V
Transition frequency	f_T	V_{CE}=-20V，Ic=10mA，f=100MHz	250			MHz
Delay time	td	Vcc=3V,V_{BE}=0.5V Ic=10mA,Ib1=1.0mA			35	ns
Rise time	tr				35	ns
Storage time	ts	Vcc=3V,Ic=10mA, Ib1=-1b2=1.0mA			200	ns
Fall time	tf				50	ns
PNP Transistor						
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=-50uA，I_E=0mA	-60			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=-1mA，I_B=0mA	-40			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=-50uA，I_C=0mA	-6			V
Collector cut off current	I_{CBO}	V_{CB}=-35V,I_E=0mA			60	nA
Emitter cut off current	I_{EBO}	V_{EB}=-4,I_C=0mA			60	nA
DC Current Gain	HFE	V_{CE}=-1V,I_C=-100mA	80		300	
DC Current Gain	HFE	V_{CE}=-2V,I_C=500mA	100		400	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=-800mA,I_B=-80mA		0.15	0.25	V
Base-emitter saturation voltage	$V_{BE(SAT)}$	I_C=-800mA,I_B=-80mA			1.1	V
Transition frequency	f_T	V_{CE}=-6V，Ic=20mA，f=30MHz	150			MHz
Delay time	td	Vcc=-3V,V_{BE}=0.5V Ic=10mA,Ib1=1.0mA			35	ns
Rise time	tr				35	ns
Storage time	ts	Vcc=-3V,Ic=10mA, Ib1=-1b2=1.0mA			200	ns
Fall time	tf				50	ns

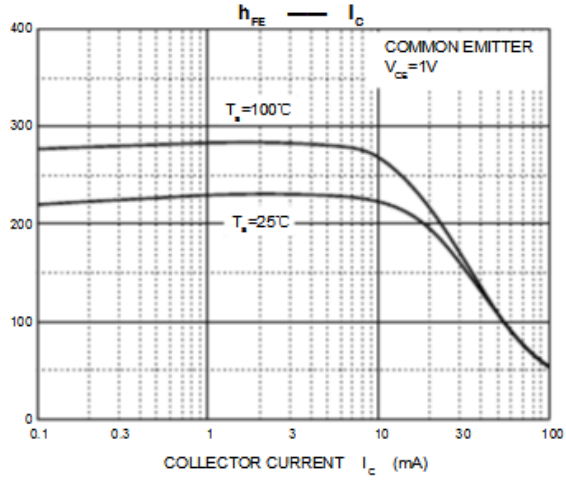
Note1. Surface mounted on FR-4 Board using 1 square inch pad size, 1oz copper.

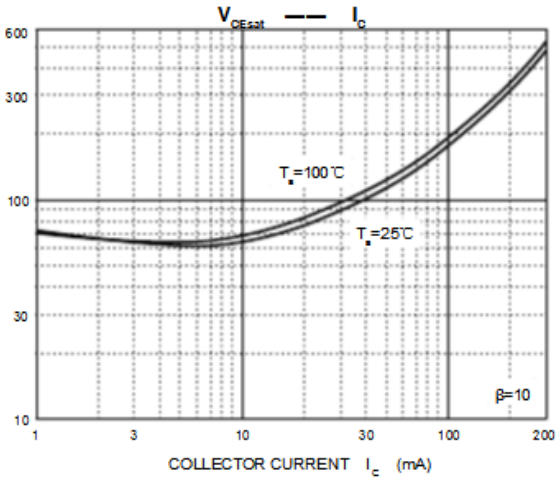
Note2. Surface mounted on FR-4 board using minimum pad size, 1oz copper

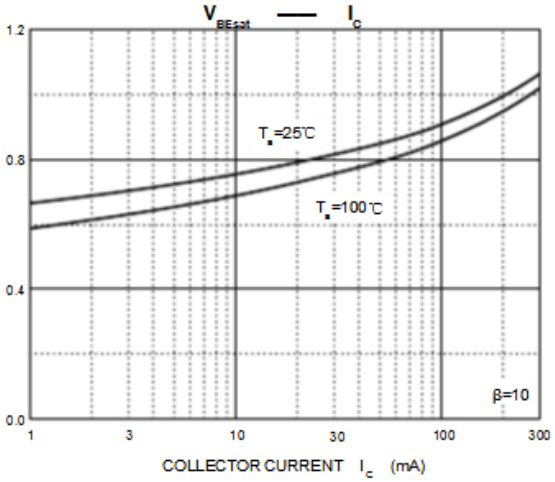
Note3. Pulse width=300μs, Duty Cycle

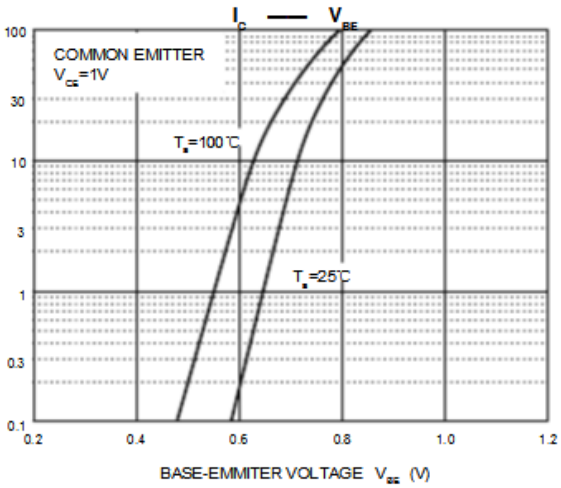
PNP and NPN Typical Performance Characteristics

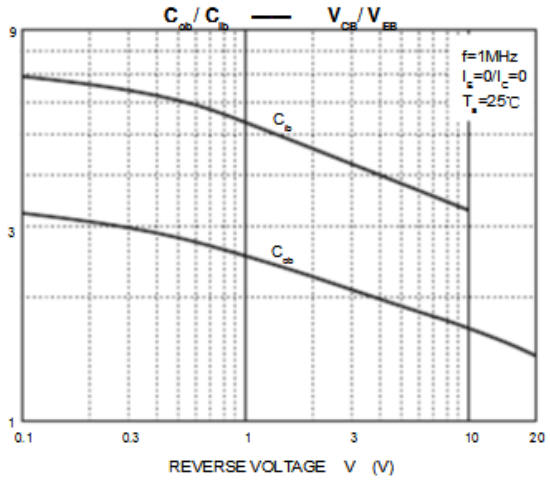


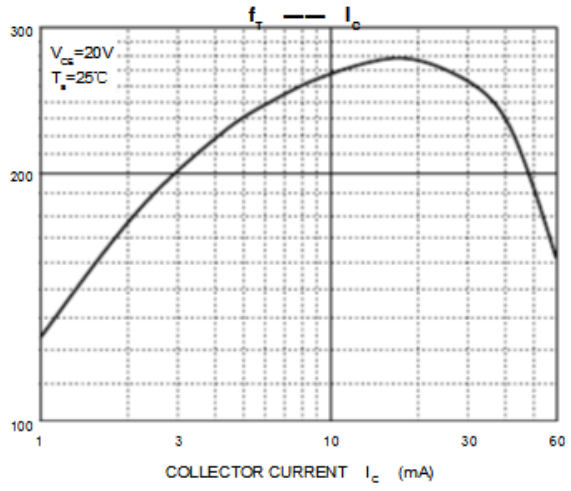


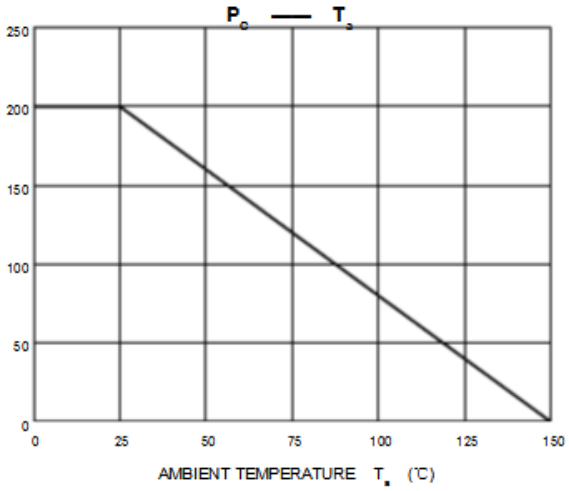












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