



## SSCN81740GS6

### High Frequency High Gain NPN Power BJT

#### ➤ Features

VCB	VCE	VEB	IC
50V	45V	5V	0.5A

#### ➤ Description

This device is produced with advanced high carrier density technology, which is especially used to minimize saturation voltage drop. This device particularly suits low voltage applications such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package. Excellent thermal and electrical capabilities.

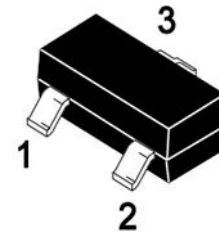
#### ➤ Applications

- Supply line switching circuits
- Battery management application
- DC/DC converter applications

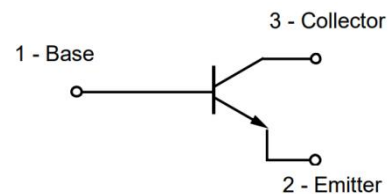
#### ➤ Ordering Information

Device	Package	Shipping
SSCN81740GS6	SOT-23	3000/Reel

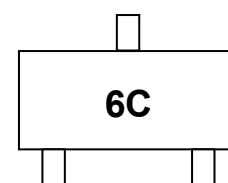
#### ➤ Pin configuration



**SOT-23**



**Circuit Diagram**



**Marking (Top View)**



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

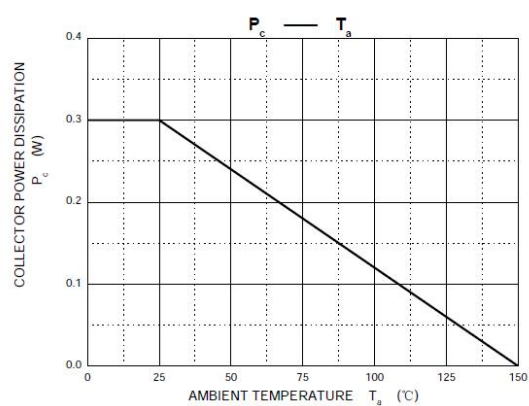
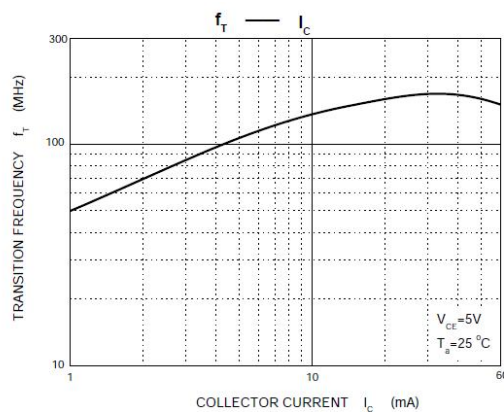
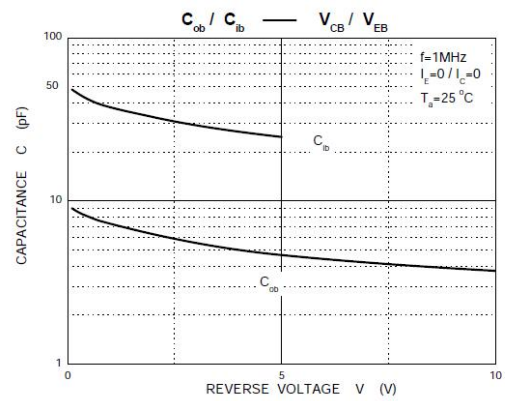
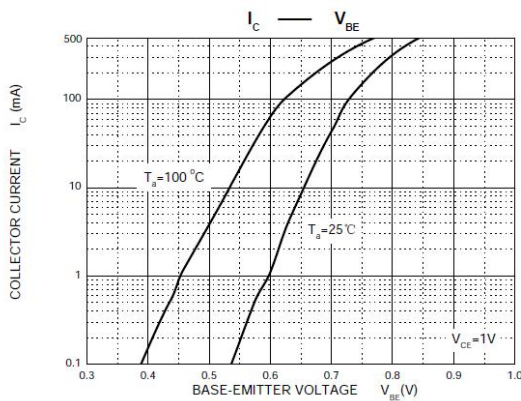
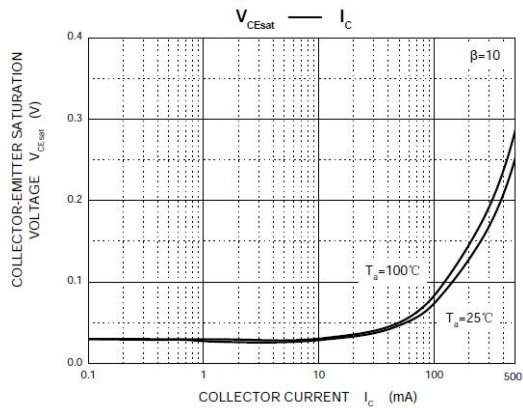
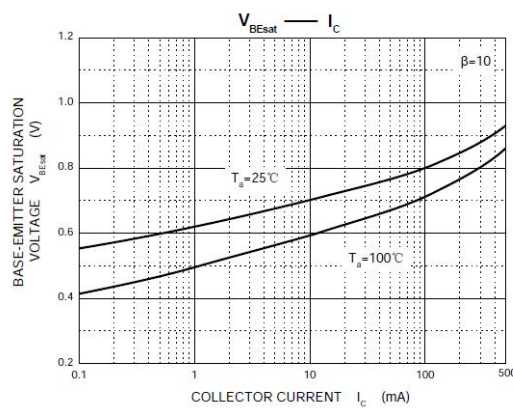
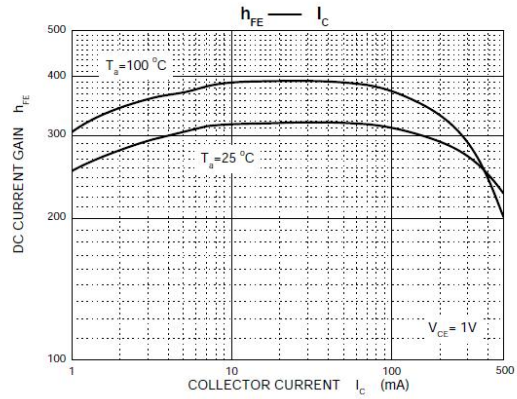
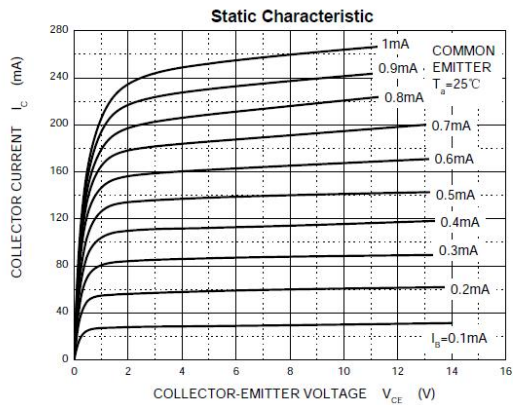
Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CB0}$	50	V
Collector- Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current-Continuous	$I_C$	500	mA
Collector Power Dissipation	$P_C$	300	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 to 150	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$BV_{CB0}$	$I_C=10\mu\text{A}, I_E=0$	50			V
Collector-emitter Breakdown Voltage	$BV_{CEO}$	$I_C=10\text{mA}, I_B=0$	45			V
Emitter -Base Breakdown Voltage	$BV_{EBO}$	$I_E=1\mu\text{A}, I_C=0$	5			V
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=45\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=1\text{V}, I_C=100\text{mA}$	250		600	
		$V_{CE}=1\text{V}, I_C=500\text{mA}$	40			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.7	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			1.2	V
Base-emitter Voltage	$V_{BE}$	$V_{CE}=1\text{V}, I_C=500\text{mA}$			1.2	V
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		10		pF
Transition frequency	$f_T$	$V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	100			MHz

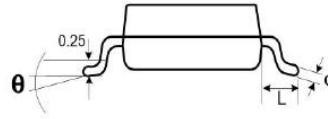
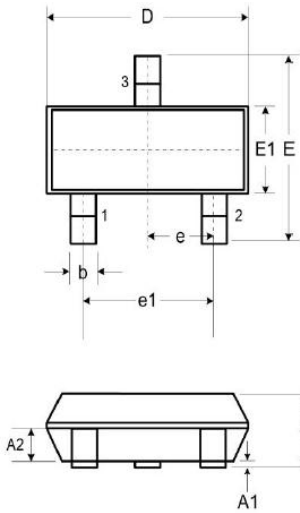


➤ Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)



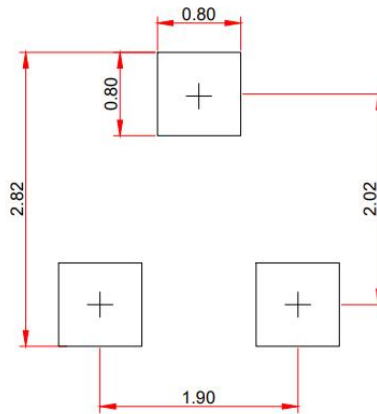


## ➤ Package Information



DIM	Millimeters		
	Min.	Typ.	Max.
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.51
c	0.08	-	0.18
D	2.80	2.90	3.04
E	2.10	2.37	2.64
E1	1.20	1.30	1.40
e	0.95		
e1	1.90		
L	0.40	0.50	0.60
L1	0.55		
N	3		
$\theta$	0°	-	8°

### Recommended Pad outline (Unit: mm)





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