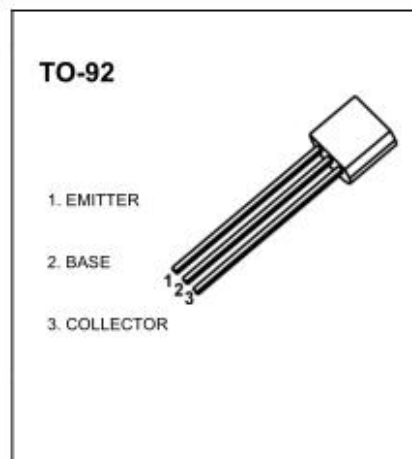


isc Silicon NPN Power Transistor**S9013****DESCRIPTION**

- Excellent hFE linearity
- Complement to PNP Type S9012
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Power amplifier applications

**ABSOLUTE MAXIMUM RATINGS(T_a=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V _{CBO}	Collector-Base Voltage	40	V
V _{CEO}	Collector-Emitter Voltage	25	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current-Continuous	500	mA
P _C	Collector Power Dissipation @ T _c =25°C	625	mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature Range	-55~150	°C

isc Silicon NPN Power Transistor
S9013
ELECTRICAL CHARACTERISTICS
 $T_c=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=100\mu\text{A}$, $I_E=0$	40			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}$; $I_B=0$	25			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=100\mu\text{A}$, $I_C=0$	5			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=500\text{mA}$; $I_B=50\text{mA}$			0.6	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=500\text{mA}$; $I_B=50\text{mA}$			1.2	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=40\text{V}$; $I_E=0$			0.1	μA
I_{CEO}	Collector cut-off current	$V_{CE}=20\text{V}$, $I_E=0$			0.1	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}$; $I_C=0$			0.1	μA
h_{FE-1}	DC Current Gain	$I_C=50\text{mA}$; $V_{CE}=1\text{V}$	64		400	
h_{FE-2}	DC Current Gain	$I_C=500\text{mA}$; $V_{CE}=1\text{V}$	40			
f_T	Current-Gain—Bandwidth Product	$V_{CE}=6\text{V}$, $I_C=20\text{mA}$, $f=30\text{MHz}$	150			MHz

 h_{FE-1} Classifications

Rank	D	E	F	G	H	I	J
Range	64-91	78-112	96-135	112-166	144-202	190-300	300-400

NOTICE:

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications. ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.