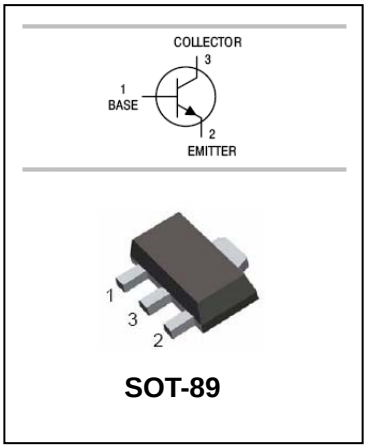
NPN medium power Transistors

BSR40/BSR41/BSR42/BSR43

FEATURES

- High current(max.1A)
- Low voltage(max.80V)
- Thick and thin-film circuits.
- Telephony and general industrial applications.
- NPN complements:BSR30,BSR31 and BSR33.

Lead-free



SOT-89

ORDERING INFORMATION

Type No.	Marking	Package Code
BSR40	AR1	SOT-89
BSR41	AR2	SOT-89
BSR42	AR3	SOT-89
BSR43	AR4	SOT-89

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	**Parameter**	**Value**	**Unit**
V_{CBO}	Collector-Base Voltage BSR40 BSR41 BSR42 BSR43	70 90	V
V_{CEO}	Collector-Emitter Voltage BSR40 BSR41 BRS42 BSR43	60 80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	DC Collector Current	1	A
I_{CM}	Peak Collector Current	2	A
I_{BM}	Peak base current	0.2	A
P_{tot}	Total power dissipation,T_S=130℃	1.35	W
T_j, T_{stg}	Junction and Storage Temperature	-65 to+150	℃

NPN medium power Transistors

BSR40/BSR41/BSR42/BSR43

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

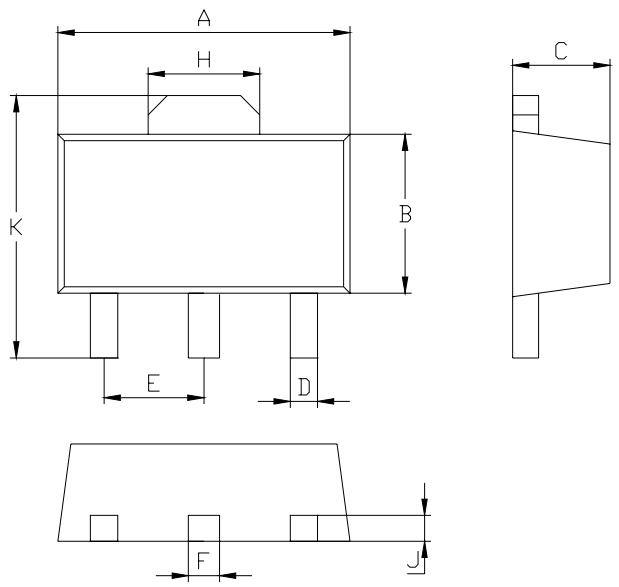
Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector cut-off current	I_{CBO}	V_{CB}=60V I_E=0		100	nA
		V_{CB}=60V I_E=0,T_A=150℃		50	μA
Emitter-base cut-off current	I_{EBO}	V_{CE}=5V I_C=0A		100	nA
DC current gain	h_{FE}	V_{CE}=5V I_C=100uA BSR40;BSR42	10		
		BSR41;BSR43	30		
		V_{CE}=5V I_C=100mA BSR40;BSR42	40	120	
		BSR41;BSR43	100	300	
		V_{CE}=5V I_C=500mA BSR40;BSR42	30		
		BSR41;BSR43	50		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=150mA I_B=15mA		0.25	V
		I_C=500mA I_B=50mA		0.5	
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=150mA I_B=15mA		1	V
		I_C=500mA I_B=50mA		1.2	
Collector capacitance	C_c	I_E=i_e=0A,V_{CB}=10V f=1MHz		12	pF
Emitter capacitance	C_e	I_C=i_c=0A,V_{EB}=10V f=1MHz		90	pF
Transition frequency	f_T	V_{CE}=10V, I_C=50mA, f=100MHz	100		MHz
Turn-on time	t_{on}	I_{Con}=100mA;I_{Bon}=5mA;I_{Bon}=-5mA		250	Ns
Turn-off time	t_{on}			1	us

NPN medium power Transistors

BSR40/BSR41/BSR42/BSR43

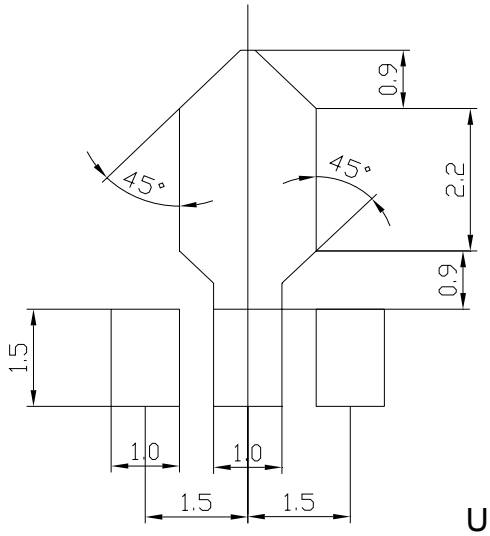
PACKAGE OUTLINE

Plastic surface mounted package SOT-89



SOT-89		
Dim	Min	Max
A	4.5	4.7
B	2.3	2.7
C	1.5Typical	
D	0.35	0.55
E	1.4	1.6
F	0.4	0.6
H	1.55	1.75
J	0.4Typical	
K	4.15	4.25
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit:mm

PACKAGE INFORMATION

Device	Package	Shipping
BSR40/BSR41/BSR42/BSR43	SOT-89	1000/Tape&Reel