



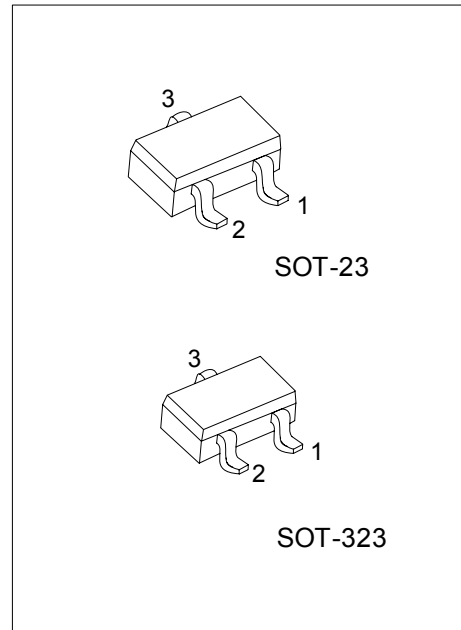
2SC3838

NPN SILICON TRANSISTOR

HIGH-FREQUENCY AMPLIFIER TRANSISTOR

FEATURES

- *High transition frequency.
- *Small r_{bb} ·Cc and high gain.
- *Small NF.



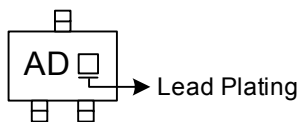
*Pb-free plating product number: 2SC3838L

ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SC3838-x-AE3-R	2SC3838L-x-AE3-R	SOT-23	E	B	C	Tape Reel
2SC3838-x-AL3-R	2SC3838L-x-AL3-R	SOT-323	E	B	C	Tape Reel

<p>2SC3838L-x-AE3-R</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323</p> <p>(3) x: refer to Classification of h_{FE}</p> <p>(4) L: Lead Free Plating, Blank: Pb/Sn</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V _{CBO}	20	V
Collector-Emitter Voltage	V _{CEO}	11	V
Emitter-Base Voltage	V _{EBO}	3	V
Collector current	I _C	50	mA
Collector power dissipation	P _D	0.2	W
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°C

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (Ta= 25 °C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BV _{CBO}	I _C =10μA	20			V
Collector-emitter breakdown voltage	BV _{CEO}	I _C =1mA	11			V
Emitter-base breakdown voltage	BV _{EBO}	I _E =10μA	3			V
Collector cutoff current	I _{CBO}	V _{CB} =10V			0.5	μA
Emitter cutoff current	I _{EBO}	V _{EB} =2V			0.5	μA
Collector-emitter saturation voltage	V _{CE(SAT)}	I _C =10mA, I _B = 5mA			0.5	V
DC current transfer ratio	h _{FE}	V _{CE} =10V, I _C =5mA	56		400	
Transition frequency	f _T	V _{CE} =10V, I _E =10mA, f=500MHz	1.4	3.2		GHz
Output capacitance	C _{ob}	V _{CB} =10V, I _E =0A, f=1MHz		0.8	1.5	pF
Collector-base time constant	r _{bb'} ·C _c	V _{CB} =10V, I _C =10mA, f=31.8MHz		4	12	ps
Noise factor	NF	V _{CE} =6V, I _C =2mA, f=500MHz, R _g =50Ω		3.5		dB

■ CLASSIFICATION of h_{FE}

RANK	A	B	C	D
RANGE	56 ~ 110	100 ~ 170	120 ~ 270	250 ~ 400

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