



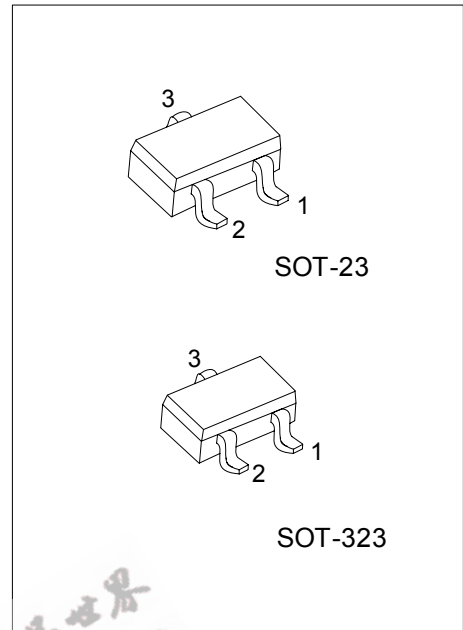
2SC3838

NPN SILICON TRANSISTOR

HIGH-FREQUENCY AMPLIFIER TRANSISTOR

FEATURES

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



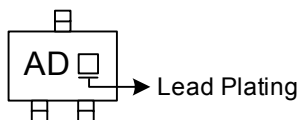
*Pb-free plating product number: 2SC3838L

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

2SC3838L-x-AE3-R	(1)Packing Type (2)Package Type (3)Rank (4)Lead Plating	(1) R: Tape Reel (2) AE3: SOT-23, AL3: SOT-323 (3) x: refer to Classification of h_{FE} (4) L: Lead Free Plating, Blank: Pb/Sn
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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}	$I_C=10\mu A$	20			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C=1mA$	11			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E=10\mu A$	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	$r_{bb'} \cdot C_c$	$V_{CB}=10V, I_C=10mA, f=31.8MHz$		4	12	ps
Noise factor	NF	$V_{CE}=6V, I_C=2mA, f=500MHz, R_g=50\Omega$		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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