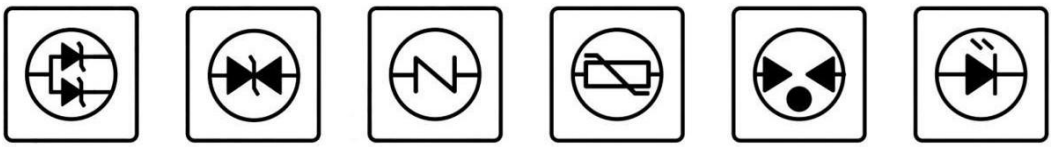
MSKSEMI 美森科
SEMICONDUCTOR



AS179-92LF-MS

Product specification

Description

The AS179-92LF-MS is a CMOS SOI single pole dual throw (SPDT) high power switch in a low cost miniature SC70-6 package. The AS179-92LF-MS is ideally suited for applications where high power, low insertion loss, and small size are required. Typical applications are for handset systems that connect separate transmit and receive functions to a common antenna, as well as other related handset and general purpose applications. This part can be used in all systems operating up to 3 GHz requiring high power at low control voltage.

Features

- $IP_{0.1dB}$: 1.6W (+32dBm) @ 3.3V, 1.4W (+31.5dBm) @1.8V
- Low insertion loss (0.28dB @ 2.5GHz)
- High isolation (24dB @ 2.5GHz)
- Low DC current: 12uA @ 3.3V, 5uA @ 1.8V
- SOT-363 Package (MSL1, 260°C per JEDEC-J-STD-020)
- ESD: 1.5 kV HBM on all pins

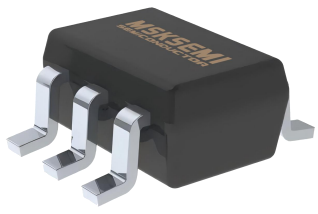
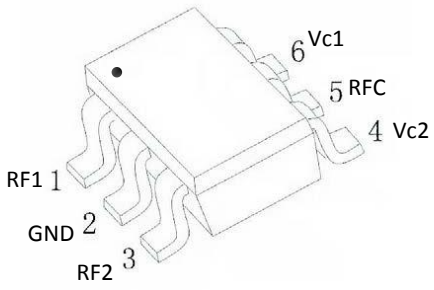
Applications

- WLAN 802.11a/b/g/n/ac/ax networks
- ISM band radios
- Low power T/R systems

ORDER INFORMATION

ORDERING NUMBER	PACKAGE	PACKING OPTION
AS179-92LF-MS	SC70-6	3000PCS

Connection Diagrams and Pin Description

SC70-6	PIN DESCRIPTION	MARKING
		

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Table 1.Pin Definition

Pin #	Name	Description	Pin #	Name	Description
1	RF1	RF port 1	4	Vc2	Logic control 2
2	GND	Ground	5	RFC	Common Port
3	RF2	RF port 2	6	Vc1	Logic control 1

Table 2. Absolute Maximum Ratings

Parameter	Absolute Maximum
Max Input Power (0.01 - 3 GHz, 3.3 V control)	+32.5 dBm
Operating Voltage	+4.2 V
Thermal resistance (Θ_{JC})	25 ℃/W
Operating Temperature	-40℃to +85℃
Storage Temperature	-65℃to +150℃

Table 3. Recommended Operating Conditions

Parameter	Symbol	Minimum	Typical	Maximum	Units
Operating frequency	f_0	0.01		3.0	GHz
Control voltage: Low High	 Vc_L Vc_H	 0 1.6	 0 3.3	 0.4 3.6	 V V
Operating temperature	$T_{oper.}$		25		℃

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Truth Table and Pin Out

Table 4. AS179-92LF-MS Truth Table

Vc1	Vc2	RFC—RF1	RFC—RF2
1	0	Isolation	Insertion loss
0	1	Insertion loss	Isolation

Note: "1" = 1.6V to 3.6V. "0" = 0V to 0.4V.

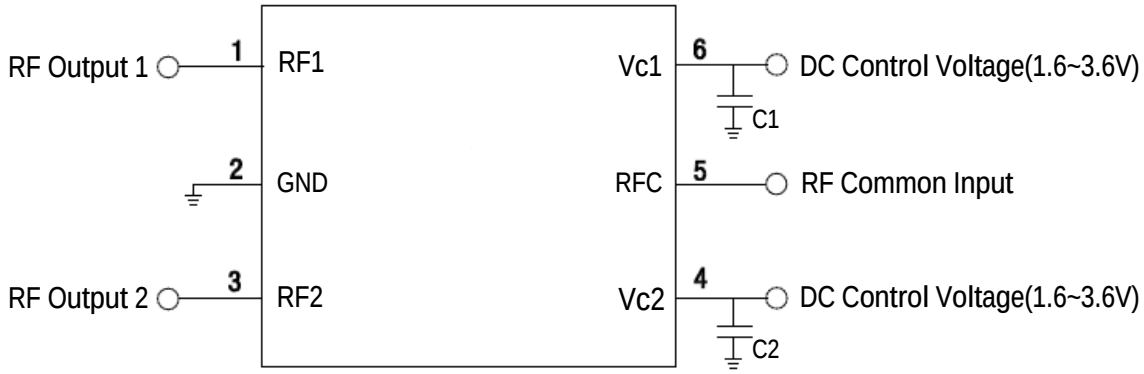


Figure2. AS179-92LF-MS PinOut

C1 and C2 are optional bypass capacitors (100pF).The RF path should use DC block capacitor if it's with any dc voltage.

ElectricalSpecification

Table5.AS179-92LF-MS Selectricalspecificationsat25℃ (0 , +3.3V)

Parameter	Test Condition	Min.	Typ.	Max.	Units
Insertion Loss	0.01GHz — 0.5GHz		0.20	0.30	dB
	0.5GHz — 1.5GHz		0.25	0.35	dB
	1.5GHz — 2.7GHz		0.28	0.38	dB
	2.7GHz — 3.0GHz		0.30	0.40	dB
Isolation	0.01GHz — 0.5GHz	35	40		dB
	0.5GHz — 1.5GHz	25	30		dB
	1.5GHz — 2.7GHz	22	24		dB
	2.7GHz — 3.0GHz	20	22		dB

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Return Loss	0.01GHz — 0.5GHz 0.5GHz — 1.5GHz 1.5GHz — 2.7GHz 2.7GHz — 3.0GHz	25 20 20 20	30 25 25 25		dB dB dB dB
2nd Hamonic	2.45GHz, Pin=+20dBm. Vc = 0V/3.3V 2.45GHz, Pin=+25dBm. Vc = 0V/3.3V		-48 -40		dBm dBm
3rd Hamonic	2.45GHz, Pin=+20dBm. Vc = 0V/3.3V 2.45GHz, Pin=+25dBm. Vc = 0V/3.3V		-67 -47		dBm dBm
$IP_{0.1dB}$	0.01 – 3 GHz, Vc = 0V/3.3V		1.6		W
			32		dBm
	0.01 – 3 GHz, Vc = 0V/1.8V		1.4		W
			31.5		dBm
IP_{1dB}	0.01 – 3 GHz, Vc = 0V/3.3V		1.8		W
			32.5		dBm
	0.01 – 3 GHz, Vc = 0V/1.8V		1.6		W
			32		dBm
Control Current	V_{low} = 0 to 0.2 V V_{high} = 3.3 V		12	20	uA
	V_{low} = 0 to 0.2 V V_{high} = 1.8 V		5	10	uA
Trise, Tfall	10% to 90% RF, 90% to 10% RF		30		ns
	50% control to 90% RF, and 50% control to 10% RF		125		ns

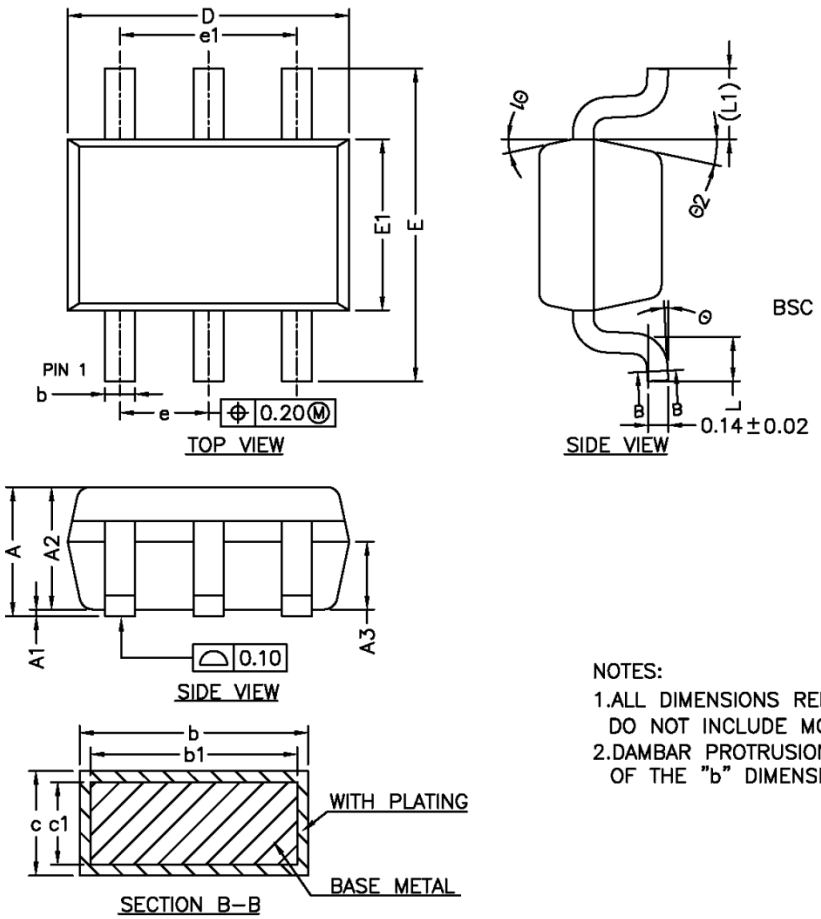
Note

1: Performance is guaranteed only under the conditions listed in this Table.

2: Board loss de-embedded.

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PackageDimensions

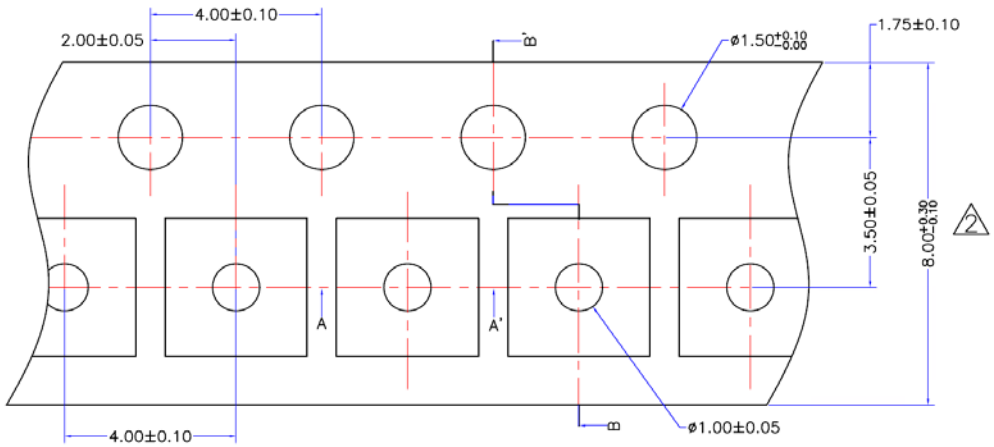


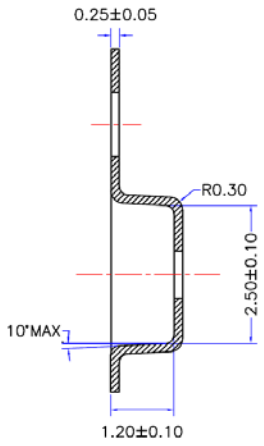
COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.80	–	1.10
A1	0	–	0.15
A2	0.80	0.90	1.00
A3	0.40	0.50	0.60
b	0.17	–	0.30
b1	0.17	0.22	0.25
c	0.14	–	0.20
c1	0.14	0.15	0.16
D	2.02	2.07	2.12
E	2.20	2.30	2.40
E1	1.21	1.26	1.31
e	0.60	0.65	0.70
e1	1.20	1.30	1.40
L	0.26	0.33	0.46
L1		0.52REF	
θ	0°	–	8°
θ1	10°	12°	14°
θ2	10°	12°	14°

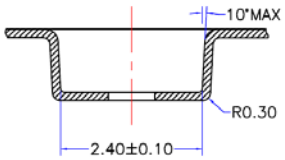
NOTES:
1.ALL DIMENSIONS REFER TO JEDEC STANDARD MO-203 AB
DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS.
2.DAMBAR PROTRUSION SHALL BE 0.08mm TOTAL IN EXCESS
OF THE "b" DIMENSION AT MAXIMUM MATERIAL CONDITION.

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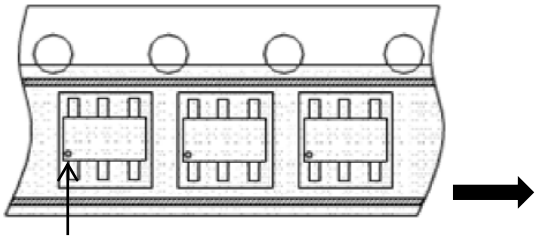
Section B–B'



Section A–A'

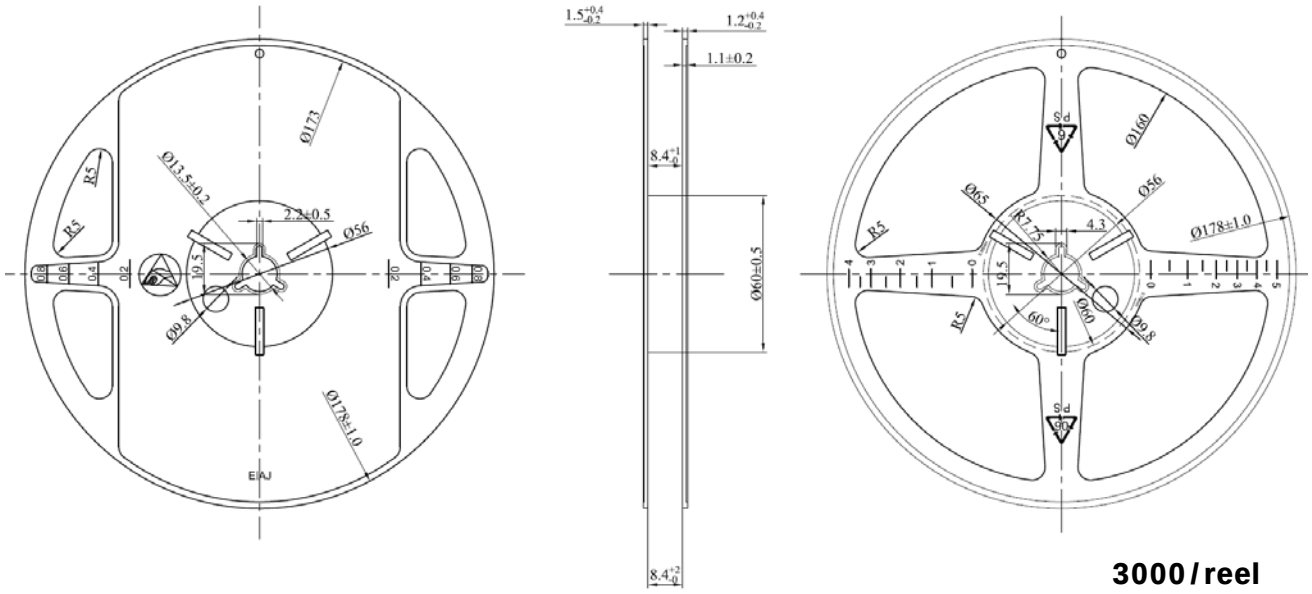
NOTES:
1. ALL DIMS IN MM
2. MATERIAL: BLACK CONDUCTIVE POLYSTYRENE
3. 10 sprocket hole pitch cumulative tolerance ±0.20mm
4. Carrier camber is within 1mm in 250mm
5. There must not be foreign body adhesion and the state of the surface must be excellent
6. Surface resistance 1X10E5≤Rs≤1X10E9 OHMS
7. 17" PLASTIC–Reel, 255000 pockets (1020m)

SC70



Pin1

User Direction of Feed

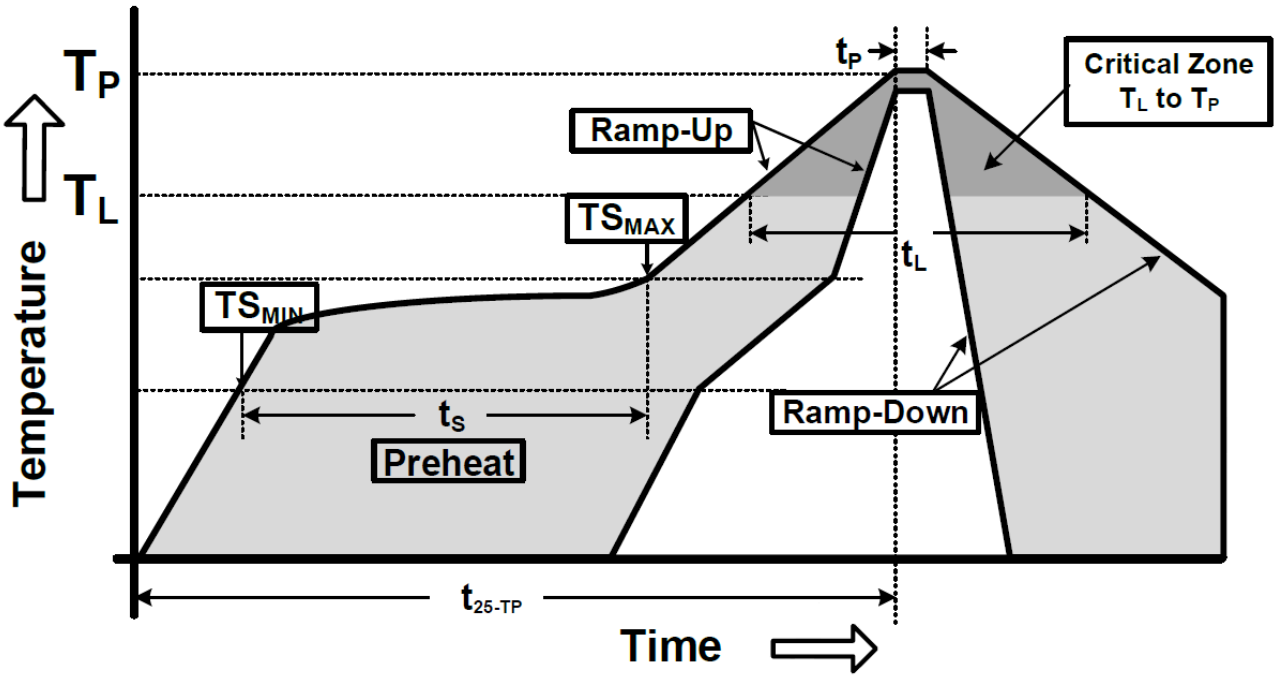


3000/reel

AS179-92LF-MS TapeandReelDimensions

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ReflowChart



Reflow Profile	Parameter
Preheat Temperature (TS_{MIN} to TS_{MAX})	150℃to 200℃
Preheat Time (t_S)	60 to 180 Seconds
Ramp-Up Rate (TS_{MAX} to T_P)	3℃/s MAX
Time Above T_L 217℃ (t_L)	60 to 150 Seconds
Peak Temperature (T_P)	260℃
Time within 5℃of Peak Temperature (t_P)	20 to 40 Seconds
Ramp-Down Rate (TS_{MAX} to T_P)	6℃/s MAX
Time for 25℃to Peak Temperature ($t_{25\text{-}TP}$)	8 Minutes MAX

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ESDPrecautions

The AS179-92LF-MS is a static-sensitive electronic device. Do not operate or store near strong electrostatic fields. ESD protection circuitry is contended in this device, but special handling precautions are required.

Human Body Model (HBM), Class-1C	HBM	1500 V
Charged Device Model (CDM), Class_C3	CDM	2000V

RoHSCompliant

The product does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE), and are therefore considered RoHS compliant.

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