Qualcomm

RF360
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SAW Components

BeiDou/GPS/Glonass Extractor Filter

BeiDou/GPS/Glonass Extractor

Series/type:	B8636
Ordering code:	B39162B8636P810
Date:	December 16, 2014
Version:	2.1

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Series/type:	**B8636**
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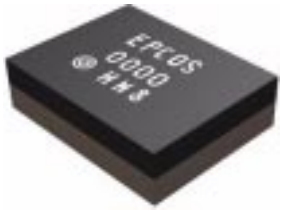
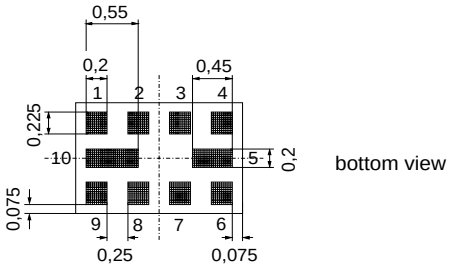
Application

- Low-loss BeiDou/GPS/Glonass Extractor
- Using common antenna for BeiDou/GPS/Glonass and Cellular bands
- Placed between antenna and cellular front-end switches and filters
- Usable passbands GNSS: 1559.05 -1563.144 MHz, 1574.42-1576.42 MHz, 1597.55-1605.89 MHz
- Usable passbands Cellular: 699 - 960 MHz, 1710 - 2690 MHz
- No switches and control lines required
- Integrated low loss BeiDou/GPS/Glonass filter with single ended output 50 Ω



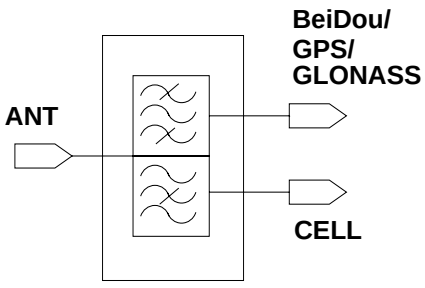
Features

- Package size 1.7 x 1.3 x 0.4 mm³
- RoHS compliant
- Approx. weight 0.003 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitivity **L**evel 3



Pin configuration

■	1	ANT input
■	4	BeiDou/GPS/Glonass output
■	9	CELL output
■	8	Shunt coil 9.1nH to ground
■	2,3,5,6,7,10	To be grounded



Characteristics

Temperature range for specification: T= –30 ˚C to +85 ˚C
ANT terminating impedance: Z_{ANT} = 50 Ω
BeiDou/GPS/Glonass terminating impedance: Z_{BGG} = 50 Ω
CELL terminating impedance: Z_{CEL} = 50 Ω

				B8636			
				min.	typ. @ 25 ˚C	max.	
Maximum insertion attenuation			α_{max}				MHz
ANT-BeiDou	1559.052	...1563.144	MHz		1.1	2.6	dB
ANT-GPS	1574.42	...1576.42	MHz		0.8	1.5	dB
ANT-Glonass	1597.55	...1605.89	MHz		1.45	3.5	dB
ANT-CELL	699.0	... 716.0	MHz		0.9	—	dB
ANT-CELL	704.0	... 824.0	MHz		0.9	1.8	dB
ANT-CELL	824.0	... 960.0	MHz		0.8	1.5	dB
ANT-CELL	1710.0	... 1990.0	MHz		1.5	2.5	dB
ANT-CELL	2110.0	... 2170.0	MHz		1.4	2.5	dB
ANT-CELL	2300.0	... 2400.0	MHz		1.3	2.5	dB
ANT-CELL	2500.0	... 2690.0	MHz		1.3	2.5	dB
Attenuation ANT-BeiDou/GPS/Glonass							
100.0	... 824.0	MHz			38	33	dB
824.0	... 960.0	MHz			48	33	dB
1710.0	... 1990.0	MHz			43	34	dB
2110.0	... 2170.0	MHz			40	30	dB
2400.0	... 2500.0	MHz			39	30	dB
2500.0	... 2690.0	MHz			36	29	dB
VSWR (Antenna port)							
BeiDou	1559.052	...1563.144	MHz		1.2	2.0	
GPS	1574.42	...1576.42	MHz		1.3	2.0	
Glonass	1597.55	...1605.89	MHz		1.5	2.0	
CELL	699.0	... 716.0	MHz		1.4	—	
CELL	704.0	... 824.0	MHz		1.4	2.0	
CELL	824.0	... 960.0	MHz		1.5	2.0	
CELL	1710.0	... 1990.0	MHz		1.5	2.5	
CELL	2110.0	... 2170.0	MHz		1.3	2.0	
CELL	2300.0	... 2400.0	MHz		1.2	2.0	
CELL	2500.0	... 2690.0	MHz		1.5	2.5	
VSWR (BeiDou/GPS/Glonass port)							
BeiDou	1559.052	...1563.144	MHz		1.2	2.0	
GPS	1574.42	...1576.42	MHz		1.4	2.0	
Glonass	1597.55	...1605.89	MHz		1.2	2.0	

	B8636			
	min.	typ. @ 25 °C	max.	
VSWR (CELL port)				
699.0 ... 716.0 MHz		1.35	—	
704.0 ... 824.0 MHz		1.35	2.0	
824.0 ... 960.0 MHz		1.5	2.0	
1710.0 ... 1990.0 MHz		1.5	2.5	
2110.0 ... 2170.0 MHz		1.3	2.5	
2300.0 ... 2400.0 MHz		1.2	2.0	
2500.0 ... 2690.0 MHz		1.5	2.5	
Isolation between CELL and BeiDou/GPS/Glonass path α				
699.0 ... 824.0 MHz		50		dB
824.0 ... 960.0 MHz		52		dB
1710.0 ... 1990.0 MHz		46		dB
2110.0 ... 2170.0 MHz		45		dB
2500.0 ... 2690.0 MHz		39		dB

Maximum ratings

Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5[1)]	V	
ESD voltage	V_{ESD}	50[2)]	V	Machine Model
		300[3)]	V	Human Body Model
		600[4)]	V	Charge Device Model
Input power at CELL port				55˚ C, 5000 hours:
704 ... 915 MHz	P_{IN}	27	dBm	CW signal
1710 ... 2690 MHz	P_{IN}	27	dBm	CW signal
824 ... 849 MHz	P_{IN}	35	dBm	GSM, duty cycle 1:8 effective power in On-state
880 ... 915 MHz	P_{IN}	35	dBm	GSM, duty cycle 1:8 effective power in On-state
1710 ... 1785 MHz	P_{IN}	33	dBm	GSM, duty cycle 1:8 effective power in On-state
1850 ... 1910 MHz	P_{IN}	33	dBm	GSM, duty cycle 1:8 effective power in On-state

1) 5V, 168h Damp Heat Steady State acc. to IEC60068-2-67 Cy

2) acc. to JESD22-A115B (MM - machine model), 1 negative & 1 positive pulses

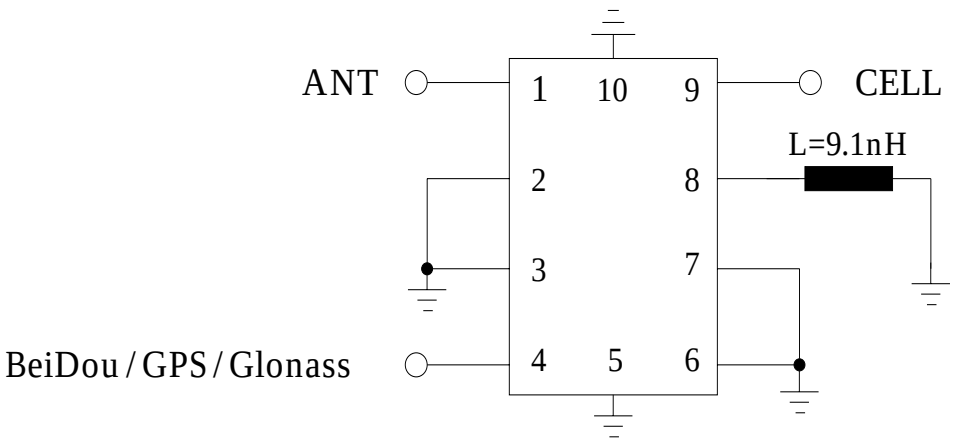
3) acc. to JESD22-A115F (HBM - Human Body Modell), 1 negative & 1 positive pulses

4) acc. to JESD22-C101C (CDM - Field Inducted Charge Device Model), 3 negative & 3 positive pulses

Matching network

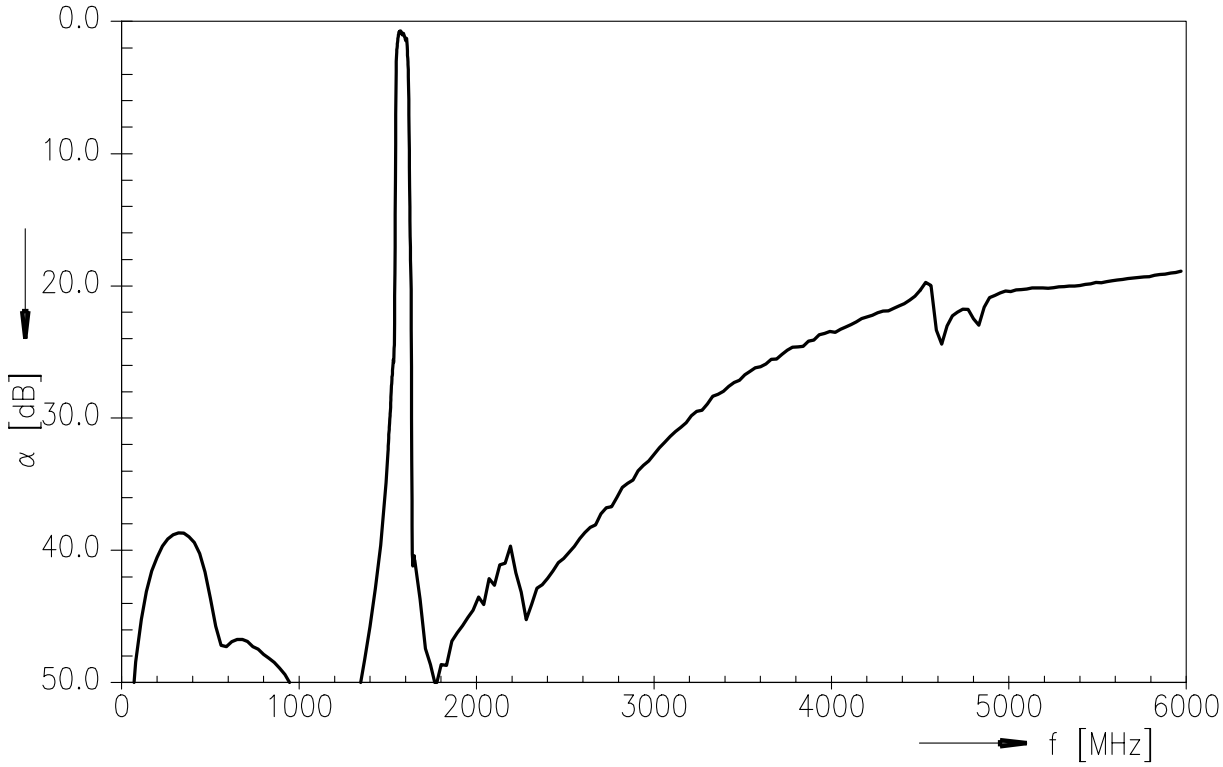
L = 9.1 nH

Recommended coil type: TDK MLG0603 P-series

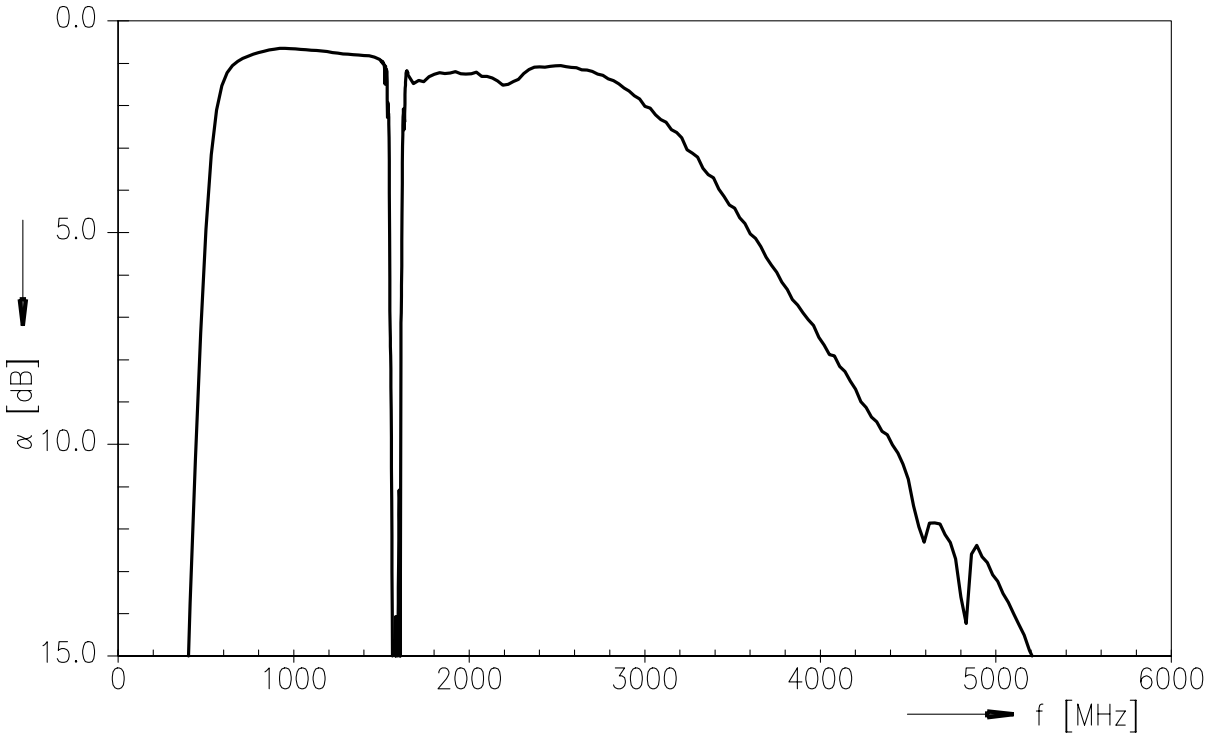


ANT-BeiDou/GPS/Glonass (transfer function passband)

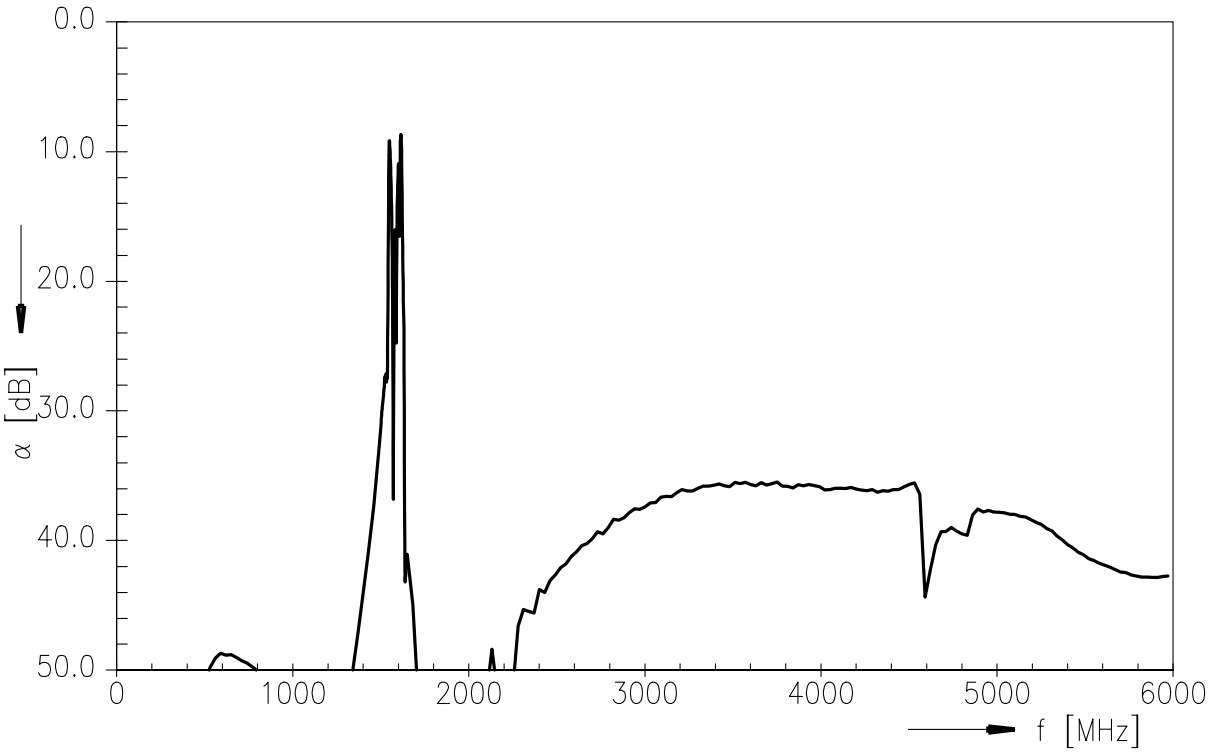
ANT-BeiDou/GPS/Glonass (transfer function wideband)



ANT-CELL (transfer function)

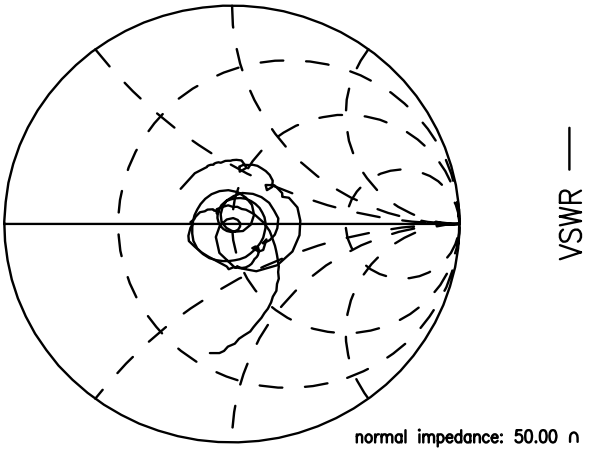


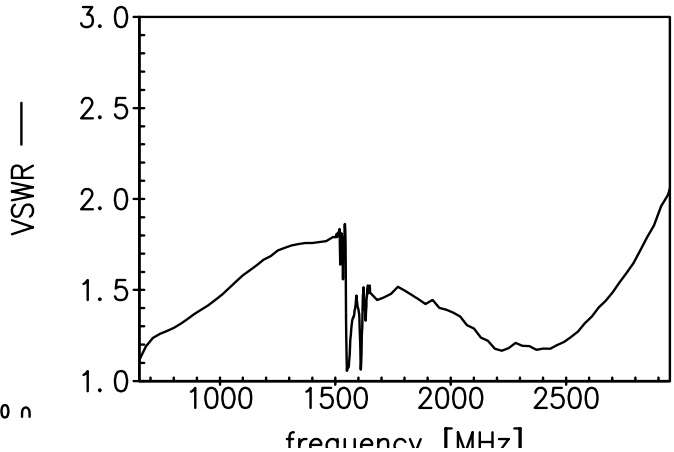
GPS-CELL (isolation, transfer function)



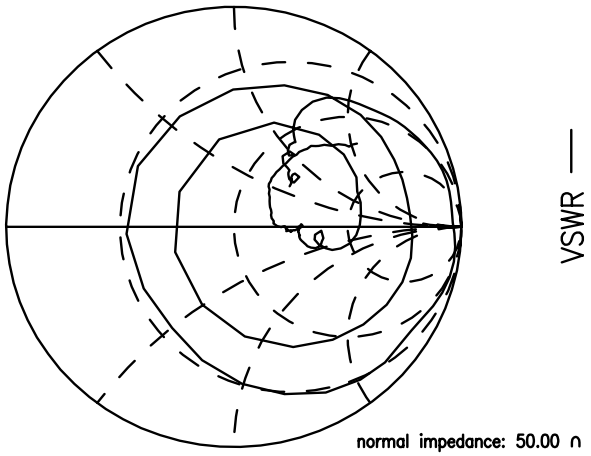
Smith charts / VSWR

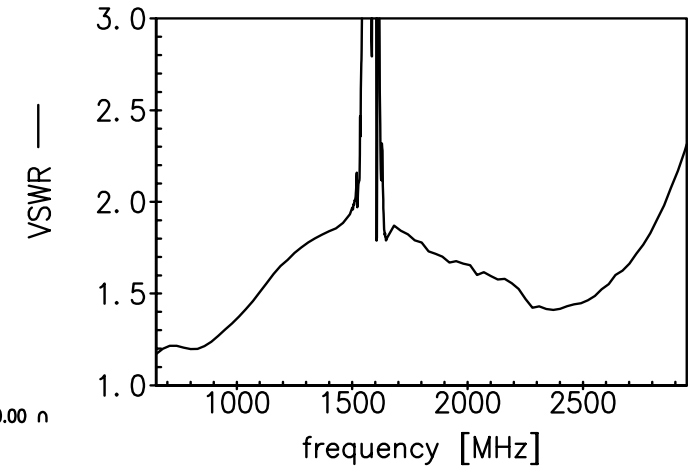
S_{11} ANT



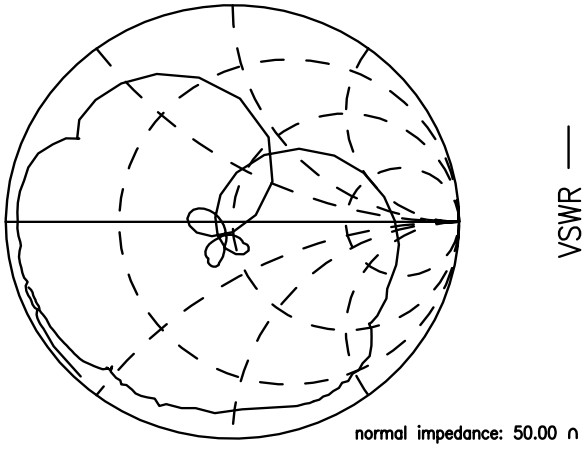


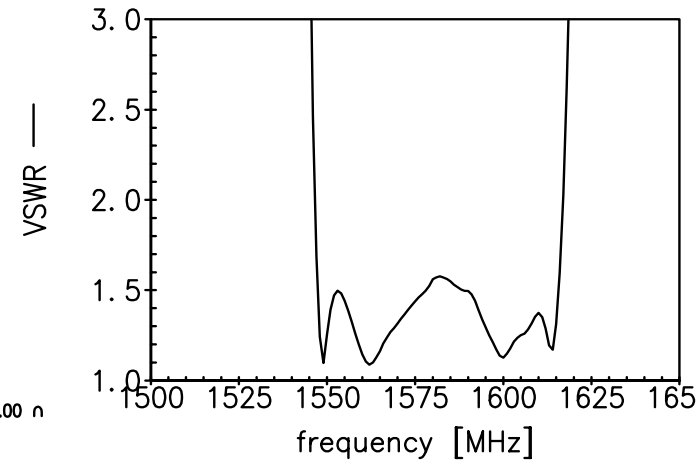
S_{22} CELL





S_{33} BeiDou/GPS/Glonass





References

Type	B8636
Ordering code	B39162B8636P810
Marking and package	C61157-A8-A148
Packaging	F61074-V8222-Z000
Date codes	L_1126
S-parameters	B8636_NB.s3p, B8636_WB.s3p see file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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