High-Performance SOI Product Family

For Broadband Communication Systems

qorvo

all around you

High-Performance SOI Product Family

Qorvo's family of broadband SOI (silicon-on-insulator) based RF switches, DSAs (digital step attenuators), TCA (temperature compensating attenuator) & PACs (programmable array capacitors) offers industry-leading linearity, power handling and reliability. Qorvo's patented, unique SOI technology enables integration of RF, analog and mixed signal functionality into single monolithic devices with best-in-class ESD rating, higher isolation, lower insertion loss and stable performance across PVT conditions.

The best-in-class RF performance coupled with higher integration and reliability enables significant reduction in overall BOM cost and PCB space and makes Qorvo® the trusted choice for market leaders in smartphones, cellular infrastructure, broadband communication, industrial & automotive, defense communication and test & measurement markets.

Qorvo's SOI switch family includes the RFSW60x2 series of 5-6,000MHz, 3-to-6 throw switches featuring an industry-leading combination of insertion loss, linearity and isolation and housed in a tiny 2x2 QFN package and a high isolation (60dB) SPDT switch, RFSW6024, both of which require no external blocking capacitors.

Description	Switch Type	Frequency (MHz)	*Insertion Loss (dB)	*Isolation (dB)	*Switching Speed (ns)	P_{IN} Max (dBm)	Package (mm)	Part Number
SPDT SOI Switch	SP2T	5 to 6000	0.3	37	2000	35	2x2 QFN	RFSW1012
SP3T SOI Switch	SP3T	5 to 6000	0.4	37	2000	35	1.8x1.8 QFN	RFSW6032
SP4T SOI Switch	SP4T	5 to 6000	0.45	34	2000	35	1.8x1.8 QFN	RFSW6042
SP6T SOI Switch	SP6T	5 to 6000	0.5	28	2000	32	2x2 QFN	RFSW6062
Dual SP3T SOI Switch	Dual SP3T	5 to 6000	0.3	35	2000	35	2x2 QFN	RFSW6232
Dual SP2T SOI Switch	Dual SP2T	5 to 6000	0.3	35	2000	35	2x2 QFN	RFSW6222
High Isolation SOI Switch	SP2T	5 to 6000	0.7	60	250	35	4x4 QFN	RFSW6024

* Measured at 2GHz

Qorvo's DSA SOI portfolio features a patented overshoot-free transient performance as standard. In addition, these DSAs come in the industry's smallest footprint, possess the industry's highest power handling capability and require no external blocking caps.

Description	Frequency (MHz)	# of Bits	Step Size (dB)	Attenuation Range (B)	*Insertion Loss (dB)	IIP3	Package (mm)	Addressing	Part Number
7-bit, 128 State DSA	5 to 6000	7	0.25	31.75	1.5	57	4x4 QFN	Parallel, Serial	RFSA3714
7-bit, 128 State DSA	5 to 6000	7	0.25	31.75	1.5	57	5x5 QFN	Parallel, Serial, Addressable	RFSA3715
6-bit, 64 State DSA	5 to 6000	6	0.5	31.5	1.5	57	3x3 QFN	Serial, Addressable	RFSA3613
5-bit, 32 State DSA	5 to 6000	5	1	31	1.5	57	3x3 QFN	Serial, Addressable	RFSA3513
7-bit, 128 State DSA	5 to 6000	7	0.25	31.75	1.5	57	3x3 QFN	Serial, Addressable	RFSA3713
6-bit, 64 State DSA	5 to 6000	6	0.25	15.75	1.5	57	3x3 QFN	Serial, Addressable	RFSA3623
4-bit, 16 State DSA	5 to 6000	4	1	15	1.5	57	3x3 QFN	Parallel	RFSA3413

* Measured at 2GHz

Qorvo's TCA product defines a new category for the industry, by replacing an entire set of passive attenuators with a monolithic attenuator that features 64 different attenuation profiles for complete flexibility in offset and slope correction.

Description	Frequency (MHz)	Attenuation Slope (dB/C)	Attenuation Range Over Temp (dB)	IP1 (dBm)	IIP3 (dBm)	Voltage Supply	Package (mm)	Part Number
64 Profile Selectable, TCA	5 to 6000	0.003 to 0.01	3 to 10	30	52	2.7 to 5.5	3x3 QFN	RFSA4033

Qorvo's high-linearity, high-Q PACs offers the industry's widest tuning ratio and best power handling, and finds application in tunable filters, phase shifters and matching networks.

Description	Frequency (MHz)	Capacitor Range (pF)	Step Size (pF)	P0.1dB (W)	IIP3 (dBm)	V_{CC} (V)	I_{CC} (μA)	Package	Part Number
6-bit, 64 State PAC	150 to 3000	0.5 to 13.7	0.2	8	>70	2.7-5.5	<100	2x2.5 QFN	RFAC3612
4-bit, 16 State PAC	150 to 3000	0.5 to 4.5	0.25	8	>70	2.7-4.5	<100	3x3 QFN	RFAC3313

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