PE42482

Product Specification

UltraCMOS® SP8T RF Switch, 10 MHz–8 GHz

Features

- High isolation: 41 dB at 6 GHz
- Low insertion loss: 1.1 dB at 6 GHz
- Fast switching time: 227 ns
- Power handling: 33 dBm CW
- Logic Select (LS) pin provides maximum control logic flexibility
- Terminated all-off state mode
- Packaging: 24-lead 4 × 4 × 0.85 mm QFN

Applications

- Wireless infrastructure
- Wireless applications up to 8 GHz
- Filter bank switching
- RF signal routing

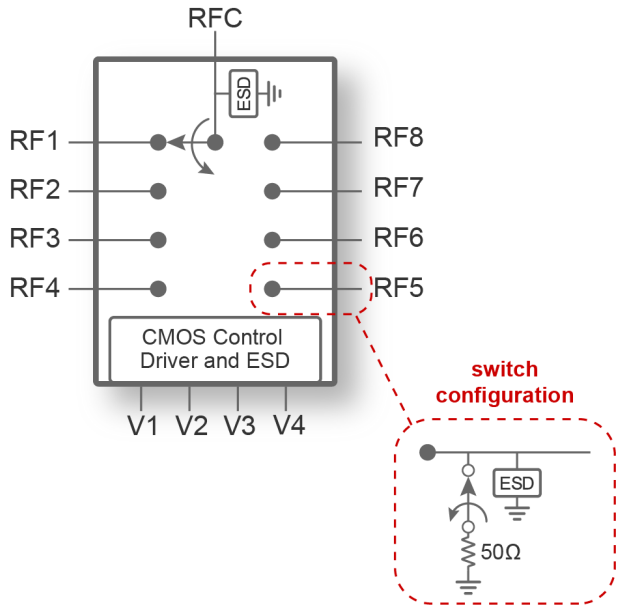

Figure 1. PE42482 functional diagram

Product description

The PE42482 is a HaRP™ technology-enhanced absorptive SP8T RF switch that supports a 10 MHz to 8 GHz frequency range. It delivers high isolation, low insertion loss, and fast switching time, making this device ideal for filter bank switching and RF signal routing in wireless infrastructure and wireless applications up to 8 GHz. No blocking capacitors are required if no DC voltage is present on the RF ports.

The PE42482 is manufactured on pSemi's UltraCMOS® process, a patented advanced form of silicon-on-insulator (SOI) technology.

pSemi's HaRP technology enhancements deliver high linearity and excellent harmonics performance. It is an innovative feature of the UltraCMOS process, offering the performance of GaAs with the economy and integration of conventional CMOS.

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Absolute maximum ratings

Exceeding the absolute maximum ratings listed in Table 1 could cause permanent damage. Restrict operation to the limits in Table 2. Operation between the operating range maximum and the absolute maximum for extended periods could reduce reliability.

ESD precautions

When handling this UltraCMOS device, observe the same precautions as with any other ESD-sensitive devices. Although this device contains circuitry to protect it from damage due to ESD, do not exceed the rating listed in Table 1.

Latch-up immunity

Unlike conventional CMOS devices, UltraCMOS devices are immune to latch-up.

Table 1. Absolute maximum ratings

Parameter or condition	Min	Max	Unit
Supply voltage, V_{DD}	-0.3	5.5	V
Digital input voltage (V1, V2, V3, V4, LS)	-0.3	3.6	V
RF input power (RFC–RFx, 50Ω)	–	See Figure 2	dBm
RF input power into terminated ports, CW(1) (RFx, 50Ω)	–	See Figure 2	dBm
Maximum junction temperature	–	+150	°C
Storage temperature range	-65	+150	°C
ESD voltage HBM, all pins(2)	–	1000	V
ESD voltage CDM, all pins(3)	–	1000	V

Notes:
1. 100% duty cycle, all bands, 50Ω
2. Human body model (MIL-STD 883 Method 3015)
3. Charged device model (JEDEC JESD22-C101)

Recommended operating conditions

Table 2 lists the PE42482 recommended operating conditions. Do not operate devices outside the operating conditions listed below.

Table 2. Recommended operating conditions

Parameter	Min	Typ	Max	Unit
Supply voltage, V_{DD}	2.3	3.3	5.5	V
Supply current, I_{DD}	–	120	200	µA
Digital input high (V1, V2, V3, V4, LS)	1.17	–	3.6	V
Digital input low (V1, V2, V3, V4, LS)	-0.3	–	0.6	V
Digital input current: - V1, V2, V3, V4 - LS	–	–	 5 10	µA
RF input power, CW (RFC–RFx)(1)	–	–	See Figure 2	dBm
RF input power, pulsed (RFC–RFx)(2)	–	–	See Figure 2	dBm
RF input power into terminated ports, CW (RFx)(1)	–	–	See Figure 2	dBm
Operating temperature range	-40	+25	+105	°C

Notes:
1. 100% duty cycle, all bands, 50Ω
2. Pulsed, 5% duty cycle of 4620-µs period, 50Ω

Electrical specifications

Table 3 lists the PE42482 key electrical specifications at +25 °C and V_{DD} = 3.3V (Z_S = Z_L = 50Ω), unless otherwise specified.

Table 3. Electrical specifications

Parameter	Path	Condition	Min	Typ	Max	Unit
Operating frequency	–	–	10 MHz	–	8 GHz	As shown
Insertion loss[1]	RFC–RF1/8	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	0.7 0.8 0.9 0.9 1.1 1.6	0.9 1.0 1.2 1.5 1.9 2.8	dB
	RFC–RF2/7	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	0.8 0.9 0.9 1.0 1.3 1.3	1.0 1.1 1.3 1.6 2.3 2.4	dB
	RFC–RF3/6	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	0.8 0.9 1.0 1.1 1.2 1.3	1.0 1.1 1.3 1.7 2.2 2.2	dB
	RFC–RF4/5	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	0.9 1.1 1.2 1.3 1.4 1.5	1.1 1.3 1.6 1.9 2.2 2.8	dB
Isolation[1]	RFC–RF1/8	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	61 45 39 34 29 25	65 47 41 36 32 30	–	dB
	RFC–RF2/7	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	63 50 45 38 30 29	67 53 47 41 34 34	–	dB
	RFC–RF3/6	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	64 51 46 38 33 29	68 53 48 40 35 31	–	dB

Parameter	Path	Condition	Min	Typ	Max	Unit
	RFC–RF4/5	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	81 57 50 45 38 33	85 62 56 48 41 38	–	dB
Return loss (active port)	RFC–RF1/8	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	25 24 24 21 26 13	–	dB
	RFC–RF2/7	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	24 23 20 18 15 16	–	dB
	RFC–RF3/6	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	24 23 18 15 12 12	–	dB
	RFC–RF4/5	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	24 23 17 15 16 18	–	dB
Return loss (RFC port)	RFC–RF1/8	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	25 23 24 23 24 12	–	dB
	RFC–RF2/7	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	24 23 21 19 20 18	–	dB
	RFC–RF3/6	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	24 23 19 16 13 13	–	dB

Parameter	Path	Condition	Min	Typ	Max	Unit
	RFC–RF4/5	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	24 22 18 16 17 17	–	dB
Return loss (terminated port)	RFC–RF1/8	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	16 15 15 15 18 21	–	dB
	RFC–RF2/7	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	16 15 15 15 18 19	–	dB
	RFC–RF3/6	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	16 15 15 15 16 19	–	dB
	RFC–RF4/5	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	16 15 15 16 23 16	–	dB
Relative insertion phase[2]	RF2–RF1 (RF7–RF8)	1 GHz 2 GHz 4 GHz 6 GHz 8 GHz	–2.6 –4.7 –7.5 –9.4 –1.4	–1.3 –2.4 –3.4 –2.8 4.4	0 –0.1 0.8 3.8 10.1	deg
	RF3–RF1 (RF6–RF8)	1 GHz 2 GHz 4 GHz 6 GHz 8 GHz	–3.0 –5.8 –9.3 –11.2 –10.2	–2.1 –4.0 –5.6 –5.7 –1.0	–1.3 –2.1 –1.9 –0.3 8.2	deg
	RF4–RF1 (RF5–RF8)	1 GHz 2 GHz 4 GHz 6 GHz 8 GHz	–6.9 –13.3 –24.7 –35.8 –45.3	–5.6 –10.7 –18.9 –26.3 –31.5	–4.3 –8.2 –13.0 –16.9 –17.6	deg
Input 1-dB compression point[3]	RFC–RFx	–	–	See Figure 2	–	dBm
Input 0.1-dB compression point[3]	RFC–RFx	–	–	See Figure 2	–	dBm
Input IP2	RFC–RFx	100 MHz–8 GHz	–	105	–	dBm

Parameter	Path	Condition	Min	Typ	Max	Unit
Input IP3	RFC–RFx	100 MHz–8 GHz	–	60	–	dBm
RF T_{RISE}/T_{FALL}	–	10%/90% RF	–	100	130	ns
Settling time	–	50% CTRL to 0.05 dB final value	–	870	1400	ns
Switching time	–	50% CTRL to 90% or 10% of RF	–	227	290	ns

Notes:
1. Insertion loss and isolation performance can be improved by a good RF ground on the LS pin (pin 1).
2. Defined with S-parameters, the relative insertion phase (RFx–RF1) = $\angle S_{(x+1)1} - \angle S_{21}$, where incident Port-1 is RFC, response Port-2 = RF1, and response Port-(x+1) = RFx.
3. The input 1-dB and 0.1-dB compression point are linearity figures of merit. For the RF input power (50Ω), see Table 2.

Spurious performance

The PE42482 spur fundamental occurs around 5 MHz. Its typical performance is –162 dBm/Hz, with 30 kHz bandwidth.

Hot-switching capability

The PE42482 maximum hot-switching capability is 20 dBm above 100 MHz. Hot switching occurs when RF power is applied while switching between RF ports.

Thermal data

The junction top-of-package, Psi-JT (Ψ_{JT}), is a thermal metric to estimate the junction temperature of the device in an application PCB, per JEDEC JESD51-2:

$$\Psi_{JT} = (T_J - T_T)/P$$

where:

- Ψ_{JT} = Junction-to-top of package characterization parameter in °C/W
- T_J = Die junction temperature in °C
- T_T = Package temperature (top surface, in the center) in °C
- P = Power dissipated by the device in Watts

Table 4. Thermal data

Parameter	Typ	Unit
Junction top-of-package, Ψ_{JT}	23	°C/W
Junction-to-ambient thermal resistance, Θ_{JA}	63	°C/W

Control logic

Table 5. Truth table

LS[1]	V4	V3	V2	V1	RFC–RF1	RFC–RF2	RFC–RF3	RFC–RF4	RFC–RF5	RFC–RF6	RFC–RF7	RFC–RF8
0	0	0	0	0	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
0	0	1	0	0	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
0	0	0	1	0	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
0	0	1	1	0	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
0	0	0	0	1	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
0	0	1	0	1	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
0	0	0	1	1	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
0	0	1	1	1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
1	0	1	1	1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	0	0	1	1	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
1	0	1	0	1	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
1	0	0	0	1	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
1	0	1	1	0	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
1	0	0	1	0	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
1	0	1	0	0	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
1	0	0	0	0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
X[2]	1	0	0	0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Notes:
1. LS has an internal 1 MΩ pull-up resistor to logic high, so leaving LS floating generates logic 1. To generate logic 0, connect LS to GND externally.
2. LS = don't care, V4 = 1, V3 = V2 = V1 = 0, all ports are terminated to provide an all-isolated state.

Power derating curve

Figure 2 shows the power derating curve showing P1dB compression, P0.1dB compression, maximum RF input power (pulsed), maximum RF input power (CW), absolute maximum RF terminated power (CW), and maximum RF terminated power (CW).

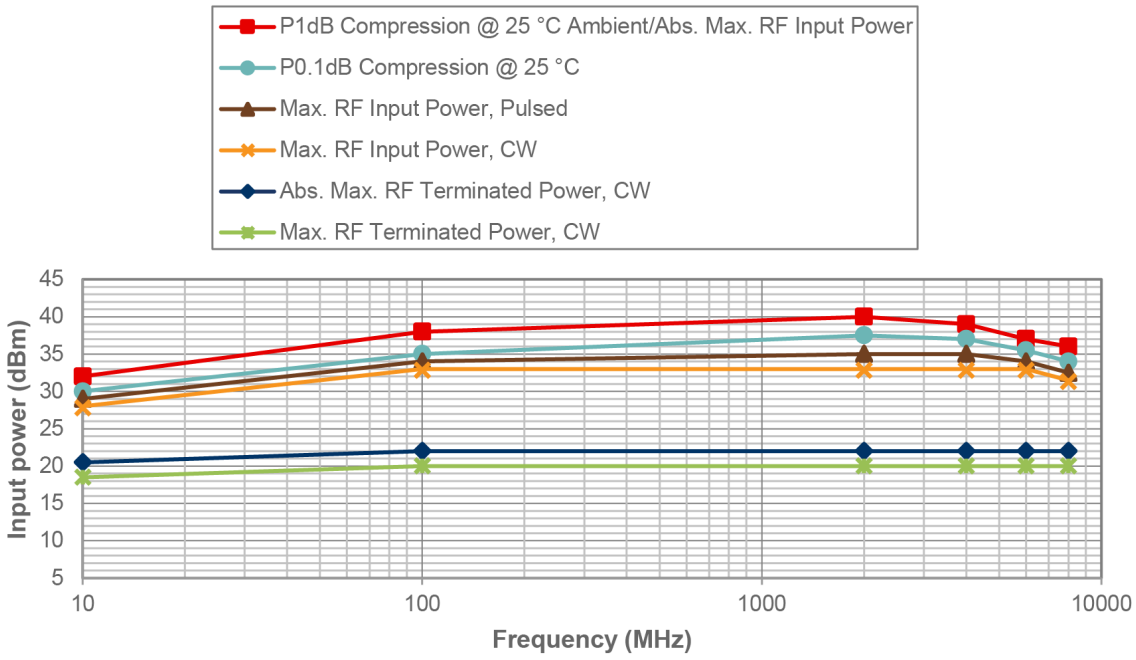


Figure 2. Power derating curve, 10 MHz–8 GHz, –40 °C to +105 °C ambient, 50Ω

Isolation matrices

Table 6 lists the RFC-to-port isolation and Table 7 lists the port-to-port isolation at +25 °C, V_{DD} = 3.3V (Z_S = Z_L = 50Ω).

Table 6. RFC-to-port isolation

ON port	Frequency	Isolation (dB)							
		RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8
RF1	10–100 MHz	–	69	68	85	91	88	87	79
	100 MHz–1 GHz		62	53	62	74	66	64	57
	1–2 GHz		57	48	56	68	60	58	51
	2–4 GHz		48	40	49	63	54	52	45
	4–6 GHz		37	35	44	55	50	46	42
	6–8 GHz		34	31	41	56	47	45	38
RF2	10–100 MHz	67	–	69	90	91	88	86	77
	100 MHz–1 GHz	52		60	67	74	66	64	56
	1–2 GHz	46		57	62	68	60	57	50
	2–4 GHz	39		49	54	63	53	52	45
	4–6 GHz	32		43	49	56	50	46	42
	6–8 GHz	30		37	46	55	47	46	40
RF3	10–100 MHz	65	68	–	86	91	88	85	77
	100 MHz–1 GHz	47	55		66	74	66	63	55
	1–2 GHz	42	51		57	68	60	57	50
	2–4 GHz	36	44		50	63	53	52	45
	4–6 GHz	33	40		42	56	49	47	42
	6–8 GHz	31	36		39	55	46	47	40
RF4	10–100 MHz	65	67	68	–	90	89	85	76
	100 MHz–1 GHz	47	53	56		75	66	63	55
	1–2 GHz	41	47	51		69	59	57	49
	2–4 GHz	36	41	44		63	53	51	44
	4–6 GHz	33	36	38		55	49	46	41
	6–8 GHz	32	34	34		50	47	47	40
RF5	10–100 MHz	73	84	89	90	–	68	68	66
	100 MHz–1 GHz	51	61	65	75		57	53	49
	1–2 GHz	45	56	59	68		52	48	44
	2–4 GHz	40	49	52	61		45	41	38
	4–6 GHz	37	45	48	56		39	36	35
	6–8 GHz	34	43	46	51		34	35	34
RF6	10–100 MHz	73	84	88	93	85	–	68	66
	100 MHz–1 GHz	51	62	65	73	64		56	50
	1–2 GHz	45	56	59	67	56		51	45
	2–4 GHz	40	49	53	61	48		46	39
	4–6 GHz	37	46	49	57	41		38	35
	6–8 GHz	34	44	45	55	38		37	33
RF7	10–100 MHz	73	84	89	92	88	69	–	68
	100 MHz–1 GHz	51	62	65	73	68	60		57
	1–2 GHz	45	56	59	67	63	57		52
	2–4 GHz	40	49	53	61	56	50		44
	4–6 GHz	37	45	49	57	50	41		33
	6–8 GHz	34	43	46	56	47	38		33

RF8	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	74 52 46 40 37 33	84 62 57 49 46 42	87 66 60 53 49 46	93 73 67 60 57 55	85 63 57 50 46 42	68 54 48 41 35 31	69 65 60 51 34 35	–

Table 7. Port-to-port isolation

ON port	Frequency	Isolation (dB)							
		RF1	RF2	RF3	RF4	RF5	RF6	RF7	RF8
RF1	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	–	65 47 41 35 31 29	67 51 45 39 34 30	84 59 53 47 43 40	91 75 70 64 57 57	89 69 63 57 52 49	89 71 65 60 47 47	88 64 60 53 45 43
RF2	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	65 46 41 35 32 29	–	64 45 39 34 30 27	78 55 49 43 41 38	90 75 69 65 57 58	91 70 64 58 53 50	92 75 69 64 50 50	89 74 72 63 51 51
RF3	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	67 51 46 40 37 33	65 47 41 36 33 30	–	69 47 41 36 33 30	94 75 70 65 57 57	90 70 64 58 53 50	92 78 72 66 51 51	91 80 79 68 54 54
RF4	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	68 53 47 42 38 34	67 52 46 41 36 35	63 44 39 33 30 28	–	90 71 66 61 54 55	89 69 64 58 53 50	89 78 71 65 50 50	91 79 80 68 54 54
RF5	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	88 79 66 57 50 47	91 80 73 66 52 53	89 70 64 58 53 51	90 71 66 61 55 56	–	63 44 39 33 30 28	67 52 46 41 36 35	68 52 46 40 36 33
RF6	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	90 77 65 56 49 46	92 82 75 66 52 53	89 70 65 58 53 50	91 75 70 64 59 57	69 46 41 35 33 30	–	65 47 42 36 32 31	67 51 45 39 35 32

RF7	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	92 85 70 57 48 46	92 77 72 64 52 51	89 70 64 58 53 50	90 76 71 65 59 57	78 55 50 44 40 39	64 45 39 34 30 27	–	64 45 40 35 29 30
RF8	10–100 MHz 100 MHz–1 GHz 1–2 GHz 2–4 GHz 4–6 GHz 6–8 GHz	87 69 67 56 46 42	91 73 67 61 49 49	88 69 63 57 52 49	90 75 70 64 59 56	82 59 54 47 43 41	67 51 45 39 34 30	65 47 41 35 29 29	–

Typical performance data

Figures 3–20 show the typical performance data at +25 °C and V_{DD} = 3.3V (Z_S = Z_L = 50Ω), unless otherwise specified.

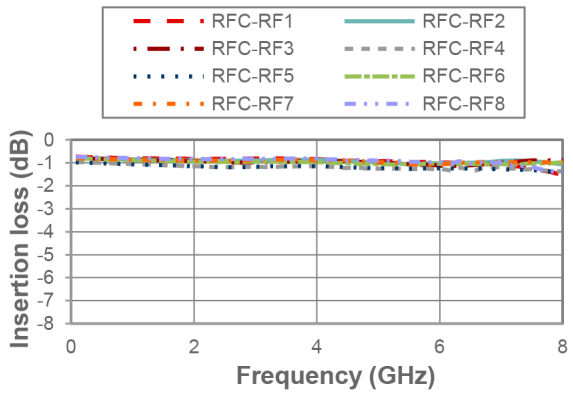


Figure 3. Insertion loss vs. frequency (RFC–RFx)

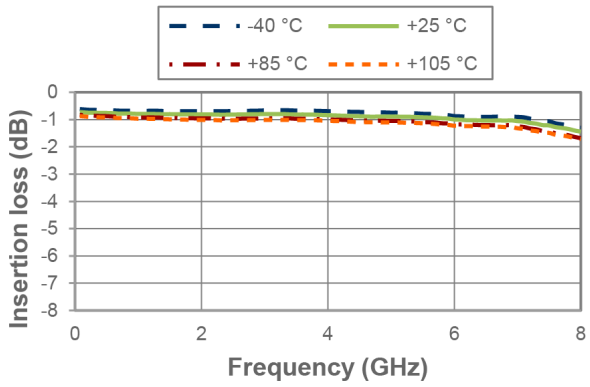


Figure 4. Insertion loss vs. frequency over temperature (RFC–RF1)

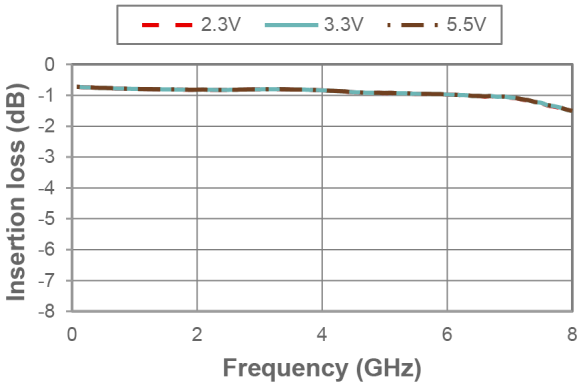


Figure 5. Insertion loss vs. frequency over V_{DD} (RFC–RF1)

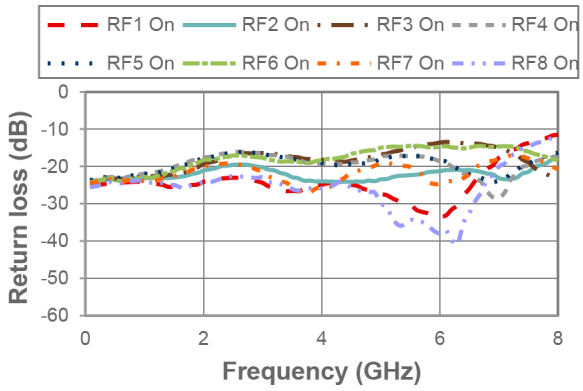


Figure 6. RFC port return loss vs. frequency

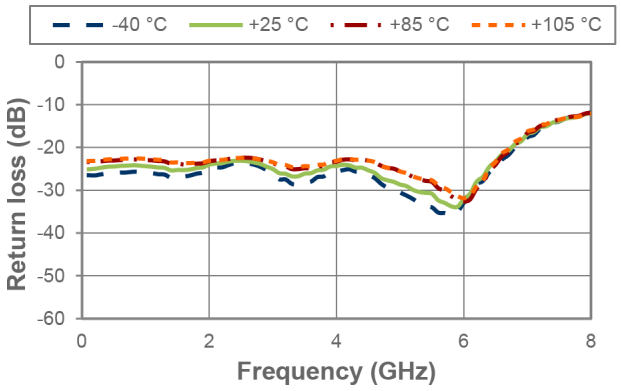


Figure 7. RFC port return loss vs. frequency over temperature (RF1 on)

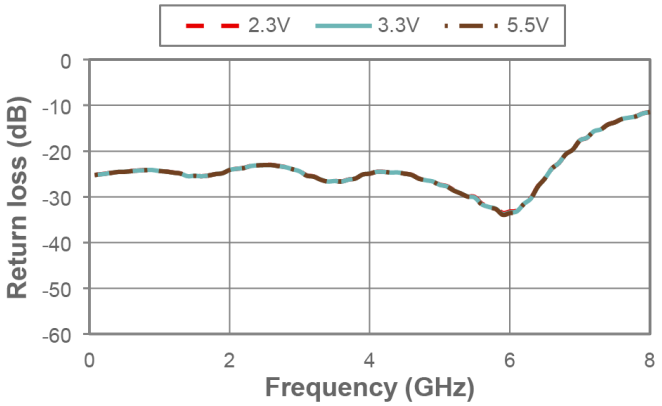


Figure 8. RFC port return loss vs. frequency over V_{DD} (RF1 on)

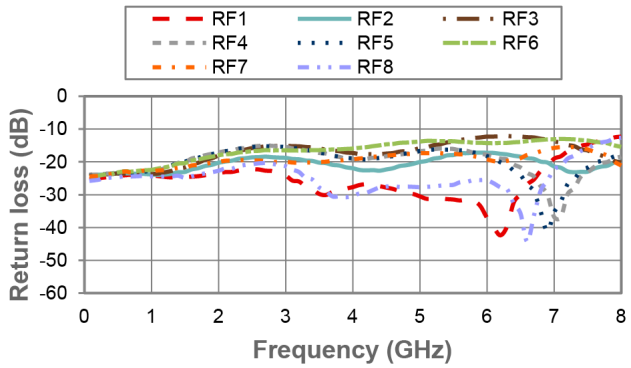


Figure 9. Active port return loss vs. frequency

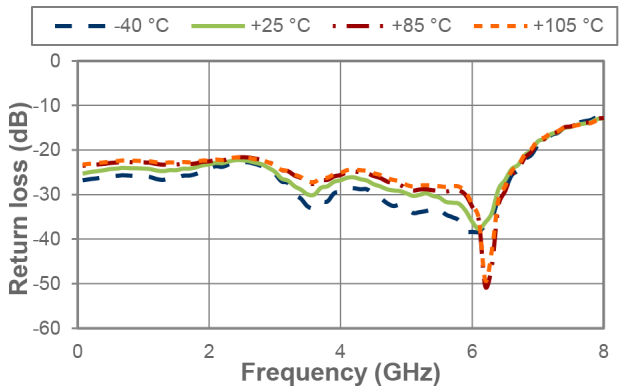


Figure 10. RF1 active port return loss vs. frequency over temperature

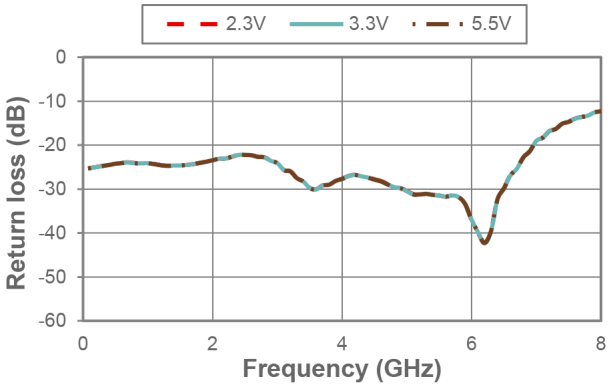


Figure 11. RF1 active port return loss vs. frequency over V_{DD}

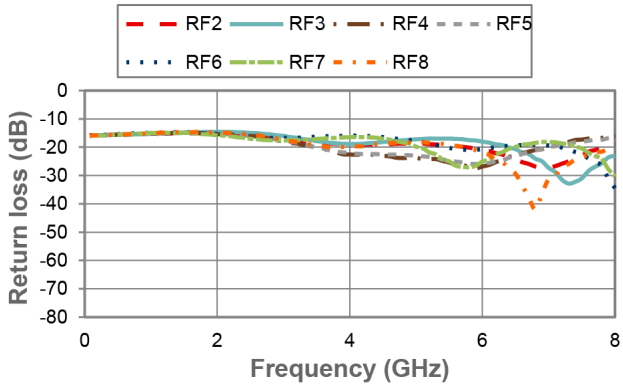


Figure 12. Terminated port return loss vs. frequency (RF1 on)

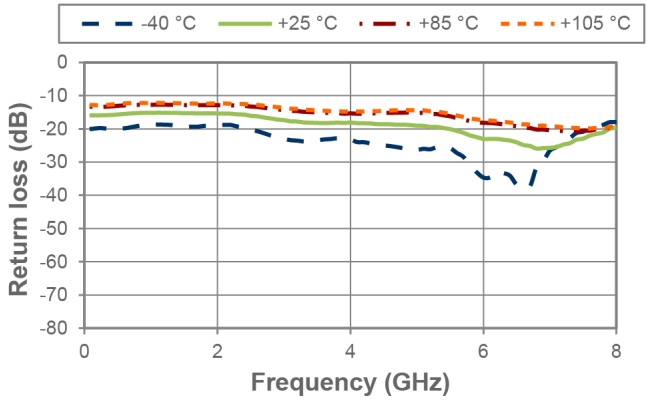


Figure 13. RF2 terminated port return loss vs. frequency over temperature (RF1 on)

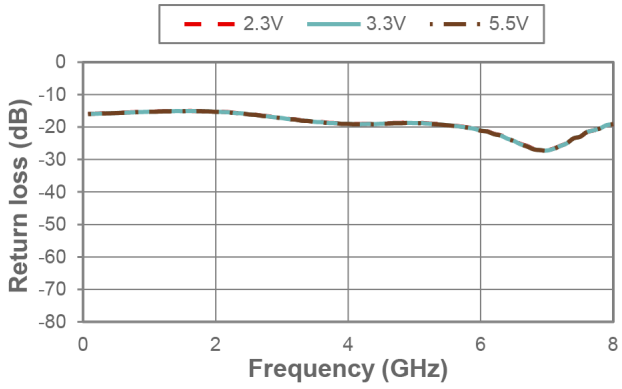


Figure 14. RF2 terminated port return loss vs. frequency over V_{DD} (RF1 on)

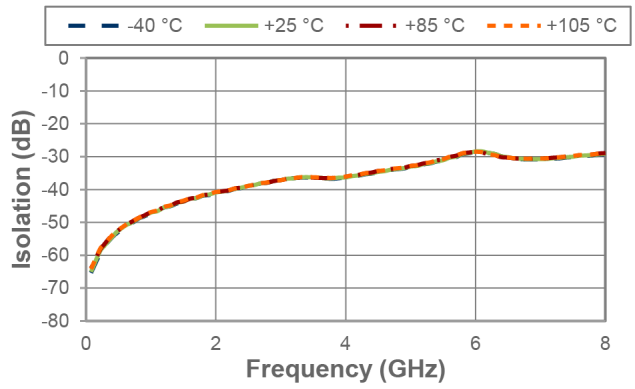


Figure 15. Isolation vs. frequency over temperature (RF1–RF2, RF1 on)

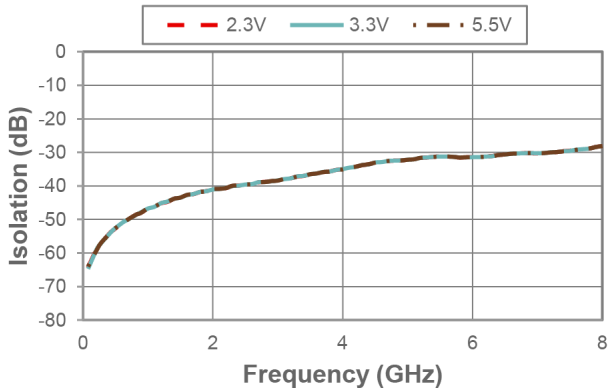


Figure 16. Isolation vs. frequency over V_{DD} (RF1–RF2, RF1 on)

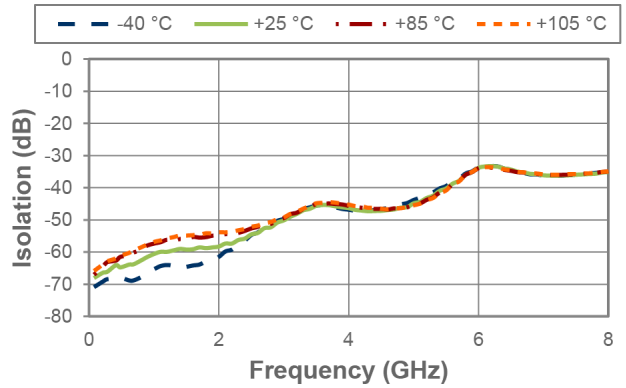


Figure 17. Isolation vs. frequency over temperature (RFC–RF2, RF1 on)

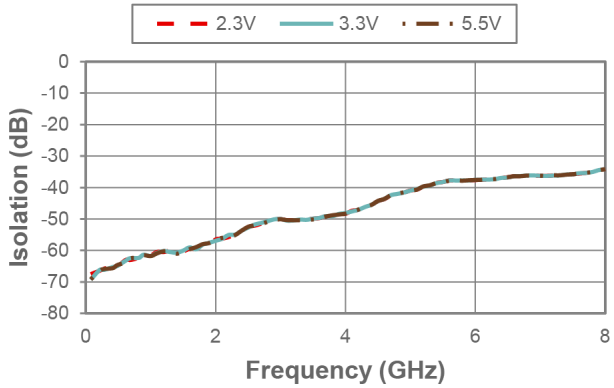


Figure 18. Isolation vs. frequency over V_{DD} (RFC–RF2, RF1 on)

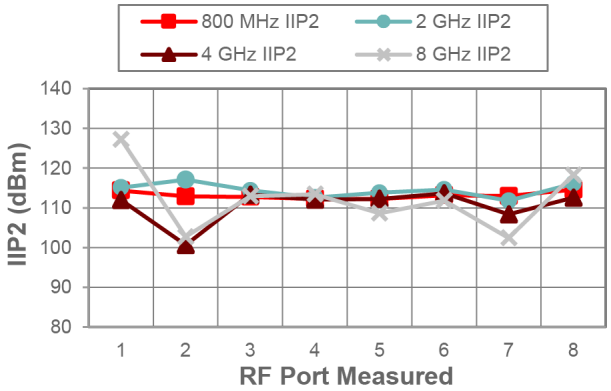


Figure 19. IIP2 vs. RF port measured

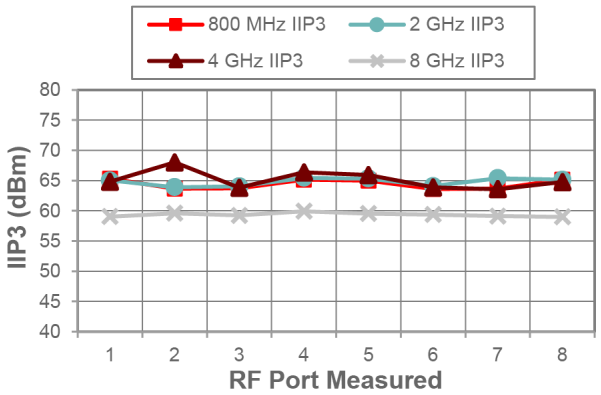


Figure 20. IIP3 vs. RF port measured

Evaluation kit

The high-throw count RF switch evaluation kit (EVK) includes hardware required to control and evaluate the functionality of the high-throw count switches. The high-throw count RF switch evaluation software can be downloaded at www.psemi.com and requires a PC running Windows® operating system to control the USB interface board. For more information, see the *Multi-throw Count RF Switch Evaluation Kit (EVK) User's Manual*.

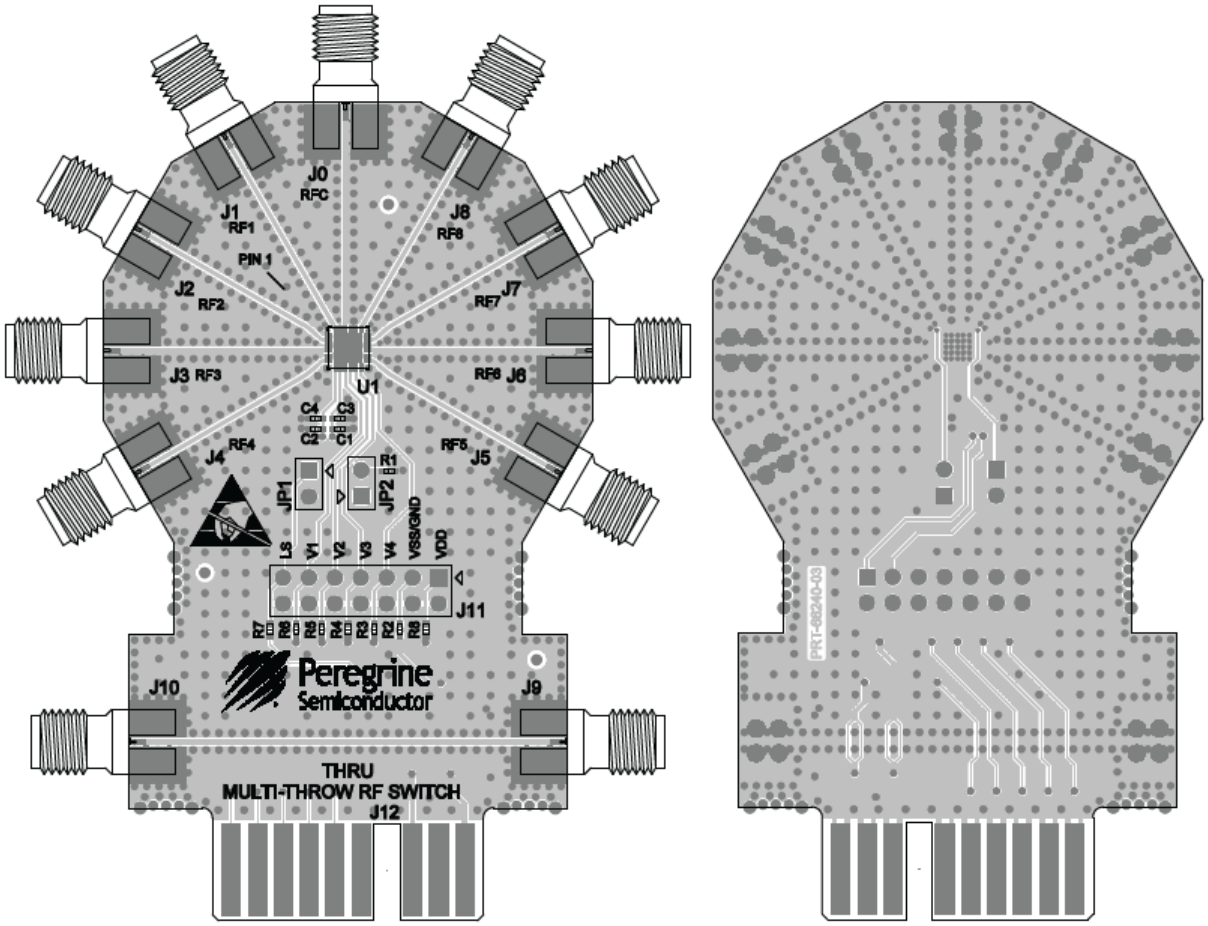


Figure 21. Evaluation board layout

Evaluation board schematic and BOM

Figure 22 shows the evaluation board schematic, and Table 8 lists the evaluation board bill of materials.

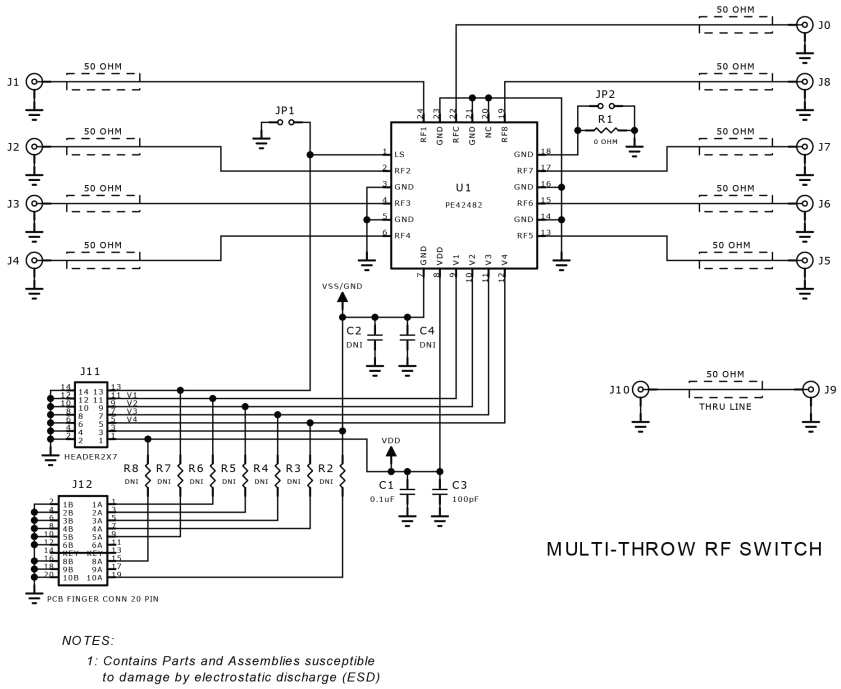


Figure 22. Evaluation board schematic

Table 8. Evaluation board components

Reference	Value	Description	Manufacturer	Mfr. part no.
C1	0.1 µF	CAP CER 0.1UF 50V X7R 0402	Murata	GRM155R71H104KE14D
C2	DNI	CAP CER 0.1UF 50V X7R 0402	Murata	GRM155R71H104KE14D
C3	100 pF	CAP CER 100PF 50V NP0 0402	Murata	GRM1555C1H101JA01D
C4	DNI	CAP CER 100PF 50V NP0 0402	Murata	GRM1555C1H101JA01D
J0–10	–	CONN SMA JACK 50 OHM EDGE MNT	Cinch Johnson	142-0761-881
J11	–	CONN HEADER .100 DUAL STR 72POS	Sullins Connector Solutions	PZC36DABN
J12	–	PCB FINGER CONNECTOR 20 PIN	–	–
JP1–2	–	2 POS HDR 0.100" (2.54mm)	Sullins Connector Solutions	PZC02SAAN
PCB	–	PCB, SP8T	pSemi Corporation	PRT-66240-03
R1	0Ω	RES SMD 0.0OHM JUMPER 1/16W 0402	Vishay Dale	CRCW04020000Z0ED
R2–8	DNI	RES SMD 0.0OHM JUMPER 1/16W 0402	Vishay Dale	CRCW04020000Z0ED
U1	PE42482	IC PE42482	pSemi Corporation	PE42482

Pin configuration

Figure 23 shows the PE42482 pin configuration for the 24-lead 4 × 4 × 0.85 mm QFN package, and Table 9 lists the description for each pin.

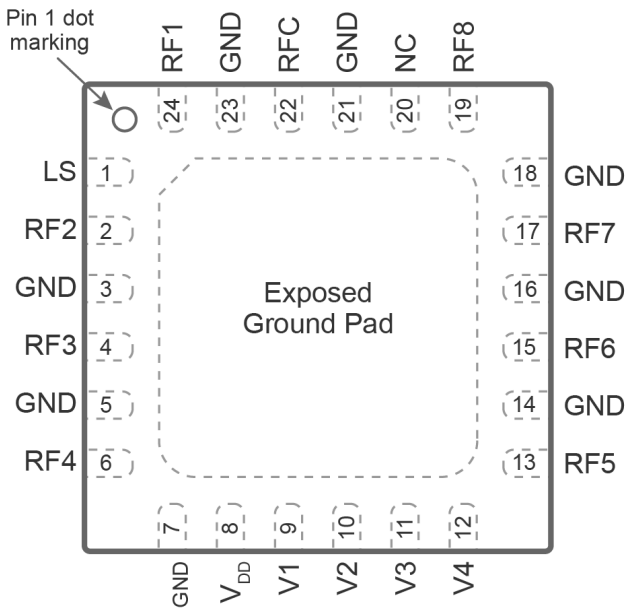


Figure 23. Pin configuration, top view

Table 9. Pin descriptions

Pin no.	Pin name	Description
1	LS	Logic Select. Determines the definition for pins V1, V2, V3, and V4.
2(1)	RF2	RF port 2
3, 5, 7, 14, 16, 18, 21, 23	GND	Ground
4(1)	RF3	RF port 3
6(1)	RF4	RF port 4
8	V_{DD}	Supply voltage, nominal 3.3V
9	V1	Digital control logic input 1
10	V2	Digital control logic input 2
11	V3	Digital control logic input 3
12	V4	Digital control logic input 4
13(1)	RF5	RF port 5
15(1)	RF6	RF port 6
17(1)	RF7	RF port 7
19(1)	RF8	RF port 8
20(2)	NC	No connect
22(1)	RFC	RF common port
24(1)	RF1	RF port 1
Pad	GND	Exposed pad. Ground for proper operation.

Notes:
1. RF pins 2, 4, 6, 13, 15, 17, 19, 22, and 24 must be at 0 VDC. These RF pins do not require DC blocking capacitors for proper operation if the 0 VDC requirement is met.
2. Pin 20 (NC) can be connected to GND or left not connected externally.

Packaging information

This section provides the following packaging data:

- Moisture sensitivity level
- Package drawing
- Package marking
- Tape-and-reel information

Moisture sensitivity level

The PE42482 moisture sensitivity level rating for the 24-lead 4 × 4 × 0.85 mm QFN package is MSL1.

Package drawing

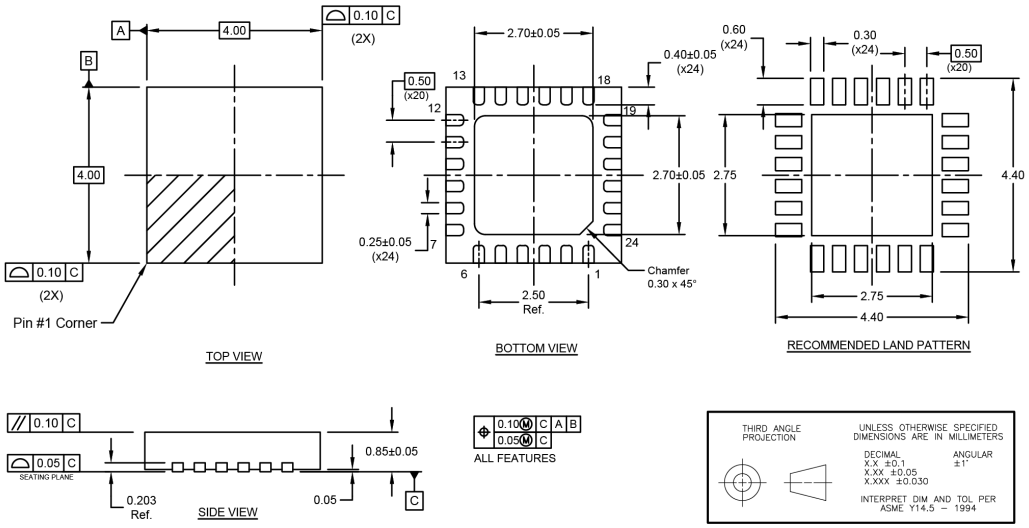


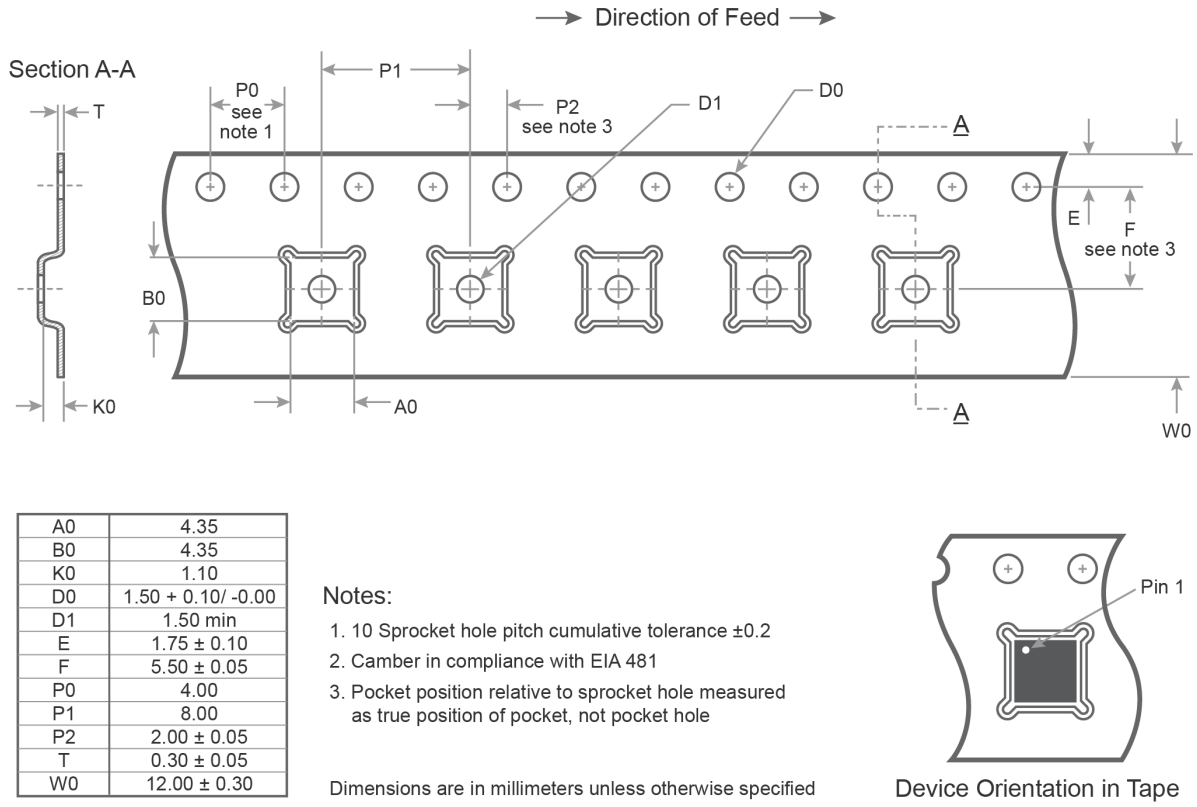
Figure 24. Package mechanical drawing for the 24-lead 4 × 4 × 0.85 mm QFN package

Top-marking specification

● = Pin 1 indicator
YY = Assembly year last two digits
WW = Assembly work week
ZZZZZZ = Assembly lot code

Figure 25. Package marking specification

Tape and reel specification



A0	4.35
B0	4.35
K0	1.10
D0	1.50 + 0.10/ -0.00
D1	1.50 min
E	1.75 ± 0.10
F	5.50 ± 0.05
P0	4.00
P1	8.00
P2	2.00 ± 0.05
T	0.30 ± 0.05
W0	12.00 ± 0.30

Notes:

1. 10 Sprocket hole pitch cumulative tolerance ±0.2
2. Camber in compliance with EIA 481
3. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole

Dimensions are in millimeters unless otherwise specified

Device Orientation in Tape

Figure 26. Tape and reel specification for the 24-lead 4 × 4 × 0.85 mm QFN package

Ordering information

Order code	Description	Packaging	Shipping method
PE42482	PE42482 RF switch	Green 24-lead 4 × 4 × 0.85 mm QFN	3000 units/T&R
EK42482-01	PE42482 evaluation kit	Evaluation kit	1/box

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