

## Product Brief

# Rugged LDMOS & GaN-SiC RF power transistors

Radar, commercial avionics, ISM applications

Infineon's latest generation of RF Power products enable the design of compact, broadband and efficient RF power amplifiers. Our LDMOS & GaN-SiC technologies provide the most advanced, rugged, and stable solutions for pulsed and CW applications.

- > 450 MHz to 3100 MHz
- > 5 W to 1400 W
- > High ruggedness & efficiency
- > High RF consistency
- > Broadband performance
- > Reference designs

### 1400 W Avionics GaN-SiC HEMT

- >  $P_{3dB} = 1400$  W
- > 1030 / 1090 MHz
- > 68% Efficiency
- > 17 dB Gain



GTVA101K42EV

### Radar and commercial avionics LDMOS product line

Product	Operating frequency (MHz)	Matching	@ $P_{1dB}$			@ $P_{3dB}$			Pulse	$V_{DD}$ (V)	Package type
			$P_{OUT}$ (W)	Gain (dB)	Eff (%)	$P_{OUT}$ (W)	Gain (dB)	Eff (%)			
PTVA030121EA	390 – 450	Unmatched	12	25.0	69	14	22.0	73	12 $\mu$ s, 10% DC	50	H-36265-2
PTVA035002EV	390 – 450	Unmatched	400	19.5	65	500	17.5	67	12 $\mu$ s, 10% DC	50	H-36275-4
PTVA102001EA	1030 / 1090	I/O	200	18.0	57	230	16.0	58	128 $\mu$ s, 10% DC	50	H-36265-2
PTVA104501EH	960 – 1215	I/O	450	17.0	57	490	15.0	55	128 $\mu$ s, 10% DC	50	H-36288-2
PTVA101K02EV	1030 / 1090	I	920	18.0	56	1090	16.0	57	128 $\mu$ s, 10% DC	50	H-36275-4
PTVA120251EA	500 – 1400	Unmatched	30	16.0	56	40	14.0	59	300 $\mu$ s, 10% DC	50	H-36265-2
PTVA120501EA	1200 – 1400	I	54	16.5	55	63	14.5	57	300 $\mu$ s, 10% DC	50	H-36265-2
PTVA123501EC/FC	1200 – 1400	I/O	375	16.0	56	415	14.0	57	300 $\mu$ s, 12% DC	50	H-36248-2/H-37248-2
PTVA127002EV	1200 – 1400	I/O	700	16.0	55	800	14.0	58	300 $\mu$ s, 10% DC	50	H-36275-4

### Radar and commercial avionics GaN-SiC product line

Product	Operating frequency (MHz)	Matching	@ $P_{3dB}$			Pulse	$V_{DD}$ (V)	Package type
			$P_{OUT}$ (W)	Gain (dB)	Eff (%)			
GTVA104001FA	960 – 1215	I	410	18.5	70	128 $\mu$ s, 10% DC	50	H-37265J-2
GTVA107001FC	960 – 1215	I	750	17	70	128 $\mu$ s, 10% DC	50	H-37248-2
<b>NEW</b> GTVA101K42EV	1030 / 1090	I	1400	17	68	128 $\mu$ s, 10% DC	50	H-36275-4
GTVA123501FA	1200 – 1400	I	370	18	72	300 $\mu$ s, 10% DC	50	H-37265J-2
GTVA126001FC	1200 – 1400	I	610	18	70	300 $\mu$ s, 10% DC	50	H-37248-2
<b>NEW</b> GTVA311801FA	2700 – 3100	I	180	15	50	100 $\mu$ s, 10% DC	50	H-37265J-2

# New solutions for radar applications

NEW

## 180 W S-Band GaN-SiC HEMT

- > GTVA311801FA
- >  $P_{3dB} = 180$  W
- > 2700 – 3100 MHz
- > 50% Efficiency
- > 15 dB Gain



## 350 W L-Band GaN-SiC HEMT

- > GTVA123501FA
- >  $P_{3dB} = 370$  W
- > 1200 – 1400 MHz
- > 72% Efficiency
- > 18 dB Gain



## 600 W L-Band GaN-SiC HEMT


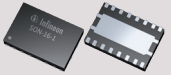
- > GTVA126001FC
- >  $P_{3dB} = 650$  W
- > 1200 – 1400 MHz
- > 65% Efficiency
- > 17.5 dB Gain



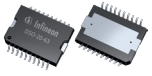

## UHF/Broadcast product line

Product	Operating frequency (MHz)	Matching	DVB-T characteristics				VSWR	Package type
			$P_{OUT}$ (W)	Gain (dB)	Eff (%)	ACPR (dBc)		
PTVA042502EC/FC	470 – 806	I	55	19.0	25.5	-29.5	10:1	H-36248-4/ H-37248-4
PTVA043502EC/FC	470 – 860	I	70	17.5	25.0	-30.0	10:1	H-36248-4/ H-37248-4
PTVA047002EV	470 – 806	I	130	17.5	29.0	-29.0	10:1	H-36275-4

## General purpose transistors (700 MHz – 2200 MHz)

Product	Operating frequency (MHz)	Matching	$P_{1dB}$ typ (W)	Gain typ (dB)	Eff typ (%)	Test signal	Supply voltage typ (V)	$R_{\theta JC}$ ( $^{\circ}C/W$ )	Package type
PTFC270051M	900 – 2700	Unmatched	7.3	20.3	60	CW @ 2170	28	3.84	SON-10 
PTFC270101M	900 – 2700	Unmatched	12	20.0	60	CW @ 2140	28	4.04	
PTVA120121M	500 – 1400	Unmatched	12	21.0	65	CW @ 821	50	4.97	
PTVA120252MT	500 – 1400	Unmatched	25	19.8	64	CW @ 960	48	2.6	SON-16 

## LDMOS integrated RF power amplifiers (700 MHz – 2200 MHz)

Product	Operating frequency (MHz)	$P_{1dB}$ Typ (W)	Gain typ (dB)	Eff typ (%)	$P_{OUT}$ avg (W)	Test signal	Supply voltage typ (V)	$R_{\theta JC}$ ( $^{\circ}C/W$ )	Package type
PTMA080152M	700 – 1000	20	30	34	8	GSM/EDGE	28	8.5/2.5	DSO-20-63 
PTMA180402M	1800 – 2200	40	30	16	5	CDMA	28	3.6/1.5	
PTMA210152M	1800 – 2200	20	28.5	33	7	WCDMA	28	3.6/1.5	
PTMC210204MD	1800 – 2200	10+10	30.5	19	2.5	WCDMA	28	9.7/3.1	HB1DSO-14 
NEW PTMC210404MD	1800 – 2200	37	31.5	19.3	5	WCDMA	28	9.7/3.1	

See our entire portfolio of RF Power solutions at [www.infineon.com/rfpower](http://www.infineon.com/rfpower) or contact us at [highpowerRF@infineon.com](mailto:highpowerRF@infineon.com)

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