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MicroWave Technology Inc. (MwT) Announces Three Families of Advanced AlGaAs/InGaAs Based Discrete Devices for Wide Range Military Microwave and Commercial Wireless Applications

FREMONT, CALIFORNIA, OCTOBER 5, 2021 – MicroWave Technology Inc, (MwT), announced three families of advanced 0.25um AlGaAs/InGaAs based discrete devices for wide range military microwave and commercial wireless applications.

The first family of the new devices includes six high linearity GaAs devices, MwT-1F, MwT-3F, MwT-5F, MwT-7F, MwT-9F, and MwT-11F, which replace the corresponding legacy MwT linear MESFETs with the same/similar die geometries and bonding diagrams. Their linear power levels, P_{1dB}, are ranged between 21 dBm and 30 dBm with ample gain for application up to 26 GHz. These devices have outstanding linearity performance, such as IP₃ and EVM, and thus are suitable for applications that demand high linearities.

The second family of the new discrete devices includes seven pHEMT devices: MwT-PH3F, MwT-PH4F, MwT-PH7F, MwT-PH8F, MwT-PH9F, MwT-PH11F, and MwT-PH15F, which replace the corresponding legacy MwT pHEMT devices. These new pHEMT devices have excellent gain, power, and power added efficiency (PAE) and can be used for wide range applications up to 30 GHz.

The last group of new pHEMT devices includes seven devices from MwT-PH27F through MwT-PH33F, which may substitute similar pHEMT devices on the market by other discrete pHEMT device suppliers.

All the new devices are available in die and package forms. They have excellent reliability with MTBF values better than 1X10⁸ hours at 150C channel temperature. The excellent reliability, robustness, and superior visual quality make these devices good candidates for various commercial, military, and hi rel applications.

The S-parameters of the devices are included in the datasheet. MwT will soon add large signal matching impedances across the useful frequency ranges onto the datasheets for easiness of using MwT devices in various applications.

MwT also offers custom designed device service for replacement of devices that customers have been using for better price-performance values.

MwT has been a key player in high quality GaAs based high linearity MESFETs and high efficiency pHEMTs in the past few decades. MwT develops, manufactures and markets GaAs and GaN based microwave amplifiers, MMICs, discrete devices for wireless communication, military, hi rel/space and medical equipment applications. Please visit our website and contact MwT Sales for samples and information regarding the new devices and custom designed device and MMIC services. Thanks.



MicroWave Technology Inc., Offers Three New Families of Advanced AlGaAs/InGaAs Based Discrete Devices for Wide Range Military Microwave and Commercial Wireless Applications

- Replaces legacy MwT Linear MESFETs
- Linear power levels, P_{1dB} , are ranged between 21 dBm and 30 dBm with ample gain for applications up to 20 GHz
- Outstanding linearity performance and thus are suitable for applications that demand high linearities
- Excellent reliability with MTBF values better than 1×10^8 hours at 150C channel temperature
- Available in die and package form
- Commercial, military, and hi-rel applications

PN	P-1dB @8GHz typ (dBm)	SSG @8GHz typ (dB)	NF @8GHz typ (dB)	OIP3 @8GHz typ (dBm)	PAE @8GHz (%)	Chip Size (microns)	Gate Width (microns)	Gate Pads (each)	Drain Pads (each)	Replaces
MwT-11F*	32.0	9.0	--	42(**)	40	780 x 345	2400	2	2	MwT-11, MwT-17

PN	P-1dB @12GHz typ (dBm)	SSG @12GHz typ (dB)	NF @12GHz typ (dB)	OIP3 @12GHz typ (dBm)	PAE @12GHz (%)	Chip Size (microns)	Gate Width (microns)	Gate Pads (each)	Drain Pads (each)	Replaces
MwT-1F	26.0	10.0	2.0	37	35	775 x 260	630	1	1	MwT-1
MwT-3F	22.0	12.0	--	32	35	415 x 260	300	1	1	MwT-3
MwT-5F	21.0	19.0	3.5	--	35	415 x 260	300 Dual	3	1	MwT-5
MwT-7F	21.0	15.0	2.0	32	35	365 x 250	250	2	2	MwT-7, S7, LP7
MwT-9F	26.5	11.0	--	35	35	485 x 315	750	1	1	MwT-9, A9

* Available with or without Via Holes. ** Tested at $P_o=25dBm/$ tone.

- Replaces legacy MwT pHEMT devices
- Excellent gain, power, and power added efficiency (PAE) and can be used for wide range applications up to 26 GHz
- Excellent reliability with MTBF values better than 1×10^8 hours at 150C channel temperature
- Available in die and package form
- Commercial, military, and hi-rel applications

PN	RF Power @12GHz typ (dBm)	SSG @12GHz typ (dB)	OIP3 @12GHz typ (dBm)	PAE @12GHz (%)	Chip Size (microns)	Gate Width (microns)	Gate Pads (each)	Drain Pads (each)	Replaces
MwT-PH8F	30.0	11.0	37	42	670 x 315	1200	2	2	MwT-PH8
MwT-PH9F	28.0	13.0	34	45	485 x 315	750	1	1	MwT-PH9
MwT-PH11F	33.0	12.0	40	45	780 x 345	2400	2	2	MwT-PH11

PN	RF Power @18GHz typ (dBm)	SSG @18GHz typ (dB)	OIP3 @18GHz typ (dBm)	PAE @18GHz (%)	Chip Size (microns)	Gate Width (microns)	Gate Pads (each)	Drain Pads (each)	Replaces
MwT-PH3F	24.0	14.0	32	50	425 x 260	300	1	1	--
MwT-PH4F	23.0	14.0	28	45	385 x 260	180	1	1	MwT-PH4
MwT-PH7F	24.5	15.0	30	45	365 x 260	250	2	2	MwT-PH7
MwT-PH15F	28.5	12.0	34	45	785 x 260	630	4	2	MwT-PH15

- NEW pHEMT devices which may substitute similar pHEMT devices on the market by other discrete device suppliers
- Excellent reliability with MTBF values better than 1×10^8 hours at 150C channel temperature
- Available in die and package form
- Commercial, military, and hi-rel applications

PN	RF Power @12GHz typ (dBm)	SSG @12GHz typ (dB)	OIP3 @12GHz typ (dBm)	PAE @12GHz (%)	Chip Size (microns)	Gate Width (microns)	Gate Pads (each)	Drain Pads (each)	Replaces
MwT-PH29F	28.5	14.0	35	48	450 x 375	800	1	1	RFMD FDP750 BeRex BCP080C
MwT-PH30F	28.0	14.0	34	45	530 x 375	800	2	2	--
MwT-PH31F	30.0	13.0	37	44	530 x 375	1200	2	2	--
MwT-PH32F	30.5	13.0	37	43	530 x 375	1600	2	2	--

PN	RF Power @18GHz typ (dBm)	SSG @18GHz typ (dB)	OIP3 @18GHz typ (dBm)	PAE @18GHz (%)	Chip Size (microns)	Gate Width (microns)	Gate Pads (each)	Drain Pads (each)	Replaces
MwT-PH27F	25.0	16.0	31	45	340 x 360	400	1	1	--
MwT-PH28F	26.5	13.0	32	45	340 x 360	600	1	1	--
MwT-PH33F	24.0	14.0	29	45	415 x 315	300	1	1	--

- MwT will soon provide power matching impedances across frequencies for the power devices
- MwT can provide matching impedances for high linearity performance for certain devices
- MwT can provide technical support on customer's design-in efforts as needed
- MwT can do custom designs for devices made by other suppliers as replacement and/or second source