

## DUAL RANGE ULTRA POWER AMPLIFIER M-NC12644D-30W2139

### DESCRIPTION

DUAL RANGE ULTRA POWER AMPLIFIER M-NC12644D-30W2139 is a complete solution ideally suited for radio applications. This module is designed for non-linear FM modulation, but may also be used for linear modulation by setting the drain quiescent current with the gate voltage and controlling the output power with the input power. Its low profile baremetal package and low external component count make it to use as standalone transmitter and(or) receiver. The output power is more than 20W in all frequency ranges. Absolute maximum output power less than 45 W at the peaks. The voltage is fixed at 12.5V, and can be programmed externally via EIA/TIA-485 bus.

### ABSOLUTE MAXIMUM RATINGS ( $T_{case}=+25^{\circ}C$ , unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	RATING	UNIT
$V_{DD}$	Drain Voltage	$V_{GG}<5V$	17	V
$V_{GG}$	Gate Voltage		6	V
$P_{in}$	Input Power	$f=210-400\text{ MHz},$ $Z_G=Z_L=50\Omega$	100	mW
$P_{out}$	Output Power		45	W
$T_{case}(OP)$	Operation Case Temperature Range		-30 to +100	$^{\circ}C$
$T_{stg}$	Storage Temperature Range		-40 to +100	$^{\circ}C$

The above parameters are independently guaranteed.

### ELECTRICAL CHARACTERISTICS ( $T_{case}=+25^{\circ}C$ , $Z_G=Z_L=50\Omega$ , unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT	
f	Frequency Range	$V_{GG}<5V$	210		400	MHz	
$P_{out}$	Output Power	$V_{DD}=12.5V,$ $P_{in}=50mW,$	20	30	45	W	
$\eta_T$	Total Efficiency		35			%	
$2f_0$	2 <sup>nd</sup> Harmonic					-25	dBc
$\rho$	Input VSWR					3:1	-
$I_{GG}$	Gate Current				1		mA
$R_{LNA}$	Receiver LNA	$V_{DD}=12.5V$	5	15		dB	
—	Stability	Load VSWR=3:1	No parasitic oscillation				
—	Load VSWR Tolerance	Load VSWR=20:1	No degradation				