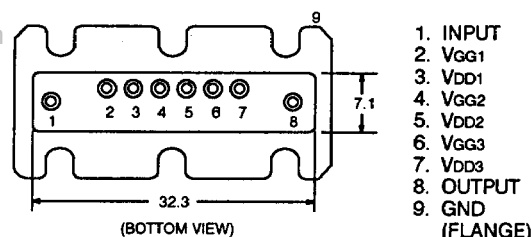
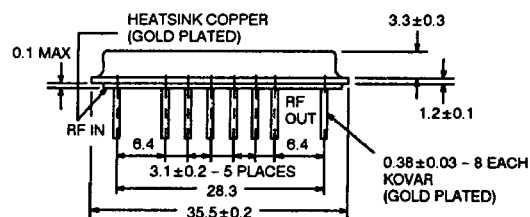
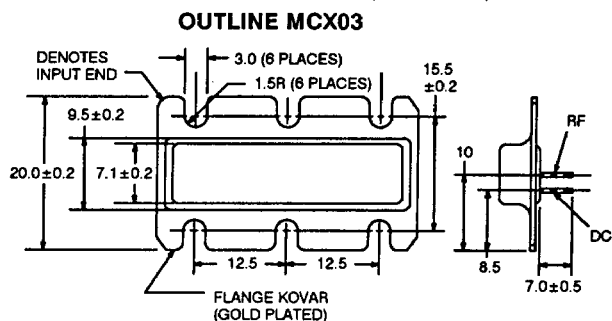


NEC[®]**X-BAND GaAs
THIN FILM HYBRID MODULE****MC-5864
MC-5865****FEATURES**

- **MEDIUM POWER OUTPUT**
MC-5864: $P_{1dB} = 20.5$ dBm TYP
at $f = 14.0$ to 14.5 GHz
- **HIGH POWER OUTPUT**
MC-5865: $P_{1dB} = 30.5$ dBm TYP
at $f = 14.0$ to 14.5 GHz
- **HIGH GAIN**
MC-5864: $GL = 22$ dB TYP at $f = 14.0$ to 14.5 GHz
MC-5865: $GL = 18$ dB TYP at $f = 14.0$ to 14.5 GHz
- **MATCHED TO 50 Ω**
- **HERMETIC CAN CASE**

OUTLINE DIMENSIONS (Units in mm)**DESCRIPTION AND APPLICATIONS**

The MC-5864 and MC-5865 are thin film hybrid power modules designed specifically for 14.0 to 14.5 GHz transmitter applications. The MC-5864 and MC-5865 are matched to 50 Ω I/O and are available in a hermetically sealed package.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

PART NUMBERS PACKAGE OUTLINE				MC-5864 MCX03			MC-5865 MCX03		
SYMBOLS	CONDITIONS	PARAMETERS	UNITS	MIN	TYP	MAX	MIN	TYP	MAX
P_{1dB}	$f = 14.0$ to 14.5 GHz $V_{D1,2,3} = 8$ V	Output Power at 1 dB Gain Compression	dBm	20	20.5		30.5	31	
GL	MC-5864 $I_{D1} = 50$ mA (RF off) $I_{D2} = 50$ mA (RF off) $I_{D3} = 90$ mA (RF off)	Linear Gain	dB	22	24		16.5	18	
ΔGL	MC-5865	Gain Flatness	dB		±0.5			±0.5	
RL_{IN}^*	$I_{D1} = 180$ mA (RF off) $I_{D2} = 400$ mA (RF off) $I_{D3} = 800$ mA (RF off)	Input Return Loss	dB	7.4	10		7.4	10	
RL_{OUT}^*	$Z_s = Z_L = 50$ Ω	Output Return Loss	dB	7.4	10			7.4	

*Small Signal

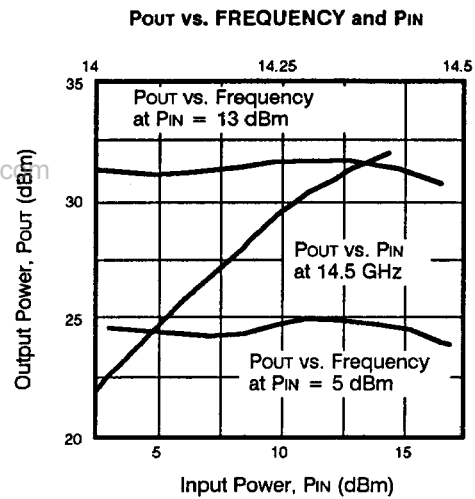
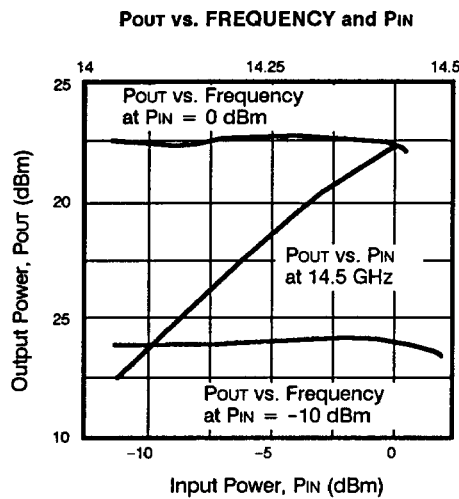
ABSOLUTE MAXIMUM RATINGS (TA = 25°C)

SYMBOLS	PARAMETERS	UNITS	MC-5864	MC-5865
VDD1, 2, 3	Drain Voltage	V	10	10
IDD1	Drain Current	mA	150	600
IDD2	Drain Current	mA	150	1200
IDD3	Drain Current	mA	300	2400
VGG1, 2, 3	Gate Voltage	V	-5	-5
IGG1	Gate Current	mA	1.5	5
IGG2	Gate Current	mA	1.5	10
IGG3	Gate Current	mA	3	20
PIN	Input Power	dBm	10	20
TC(OP)	Operating Case Temperature	°C	-55 to +100	-55 to +100
TSTG	Storage Temperature	°C	-65 to +150	-65 to +150

RECOMMENDED OPERATING CONDITIONS

SYMBOLS	PARAMETERS	UNITS	CONDITIONS
TC(OP)	Recommended Operating Case Temperature	°C	-40 to +70

TYPICAL PERFORMANCE CHARACTERISTICS (TA = 25°C)



APPLICATION BLOCK DIAGRAM

TYPICAL Ku-BAND TRANSMITTER CONFIGURATION

