

FEATURES :

■ HIGH POWER

$P_{1dB} = 44.5 \text{ dBm at } 2.3 \text{ GHz}$

■ HIGH GAIN

$G_{1dB} = 11.5 \text{ dB at } 2.3 \text{ GHz}$

■ PARTIALLY MATCHED TYPE

■ HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS ($T_a = 25^\circ\text{C}$)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Compression Point	P_{1dB}	$V_{DS} = 10 \text{ V}$ $f = 2.3 \text{ GHz}$	dBm	43.5	44.5	—
Power Gain at 1dB Compression Point	G_{1dB}		dB	10.5	11.5	—
Drain Current	I_{DS}		A	—	7.5	9.0
Power Added Efficiency	η_{add}		%	—	35	—
Channel-Temperature Rise	ΔT_{ch}	NOTE 1	$^\circ\text{C}$	—	—	80

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

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	$V_{DS} = 3 \text{ V}$ $I_{DS} = 7.0 \text{ A}$	mS	—	6300	—
Pinch-off Voltage	V_{GSoff}	$V_{DS} = 3 \text{ V}$ $I_{DS} = 140 \text{ mA}$	V	−1.0	−3.0	−4.0
Saturated Drain Current	I_{DSS}	$V_{DS} = 3 \text{ V}$ $V_{GS} = 0 \text{ V}$	A	—	20	26
Gate-Source Breakdown Voltage	V_{GSO}	$I_{GS} = -420 \mu\text{A}$	V	−5	—	—
Thermal Resistance	$R_{th(c-c)}$	Channel to Case	$^\circ\text{C/W}$	—	1.1	1.4

NOTE 1 : $\Delta T_{ch} = (V_{DS} \times I_{DS} + P_{in} - P_{1dB}) \times R_{th(c-c)}$

Recommended Gate Resistance(R_g) : 30 Ω (MAX.)

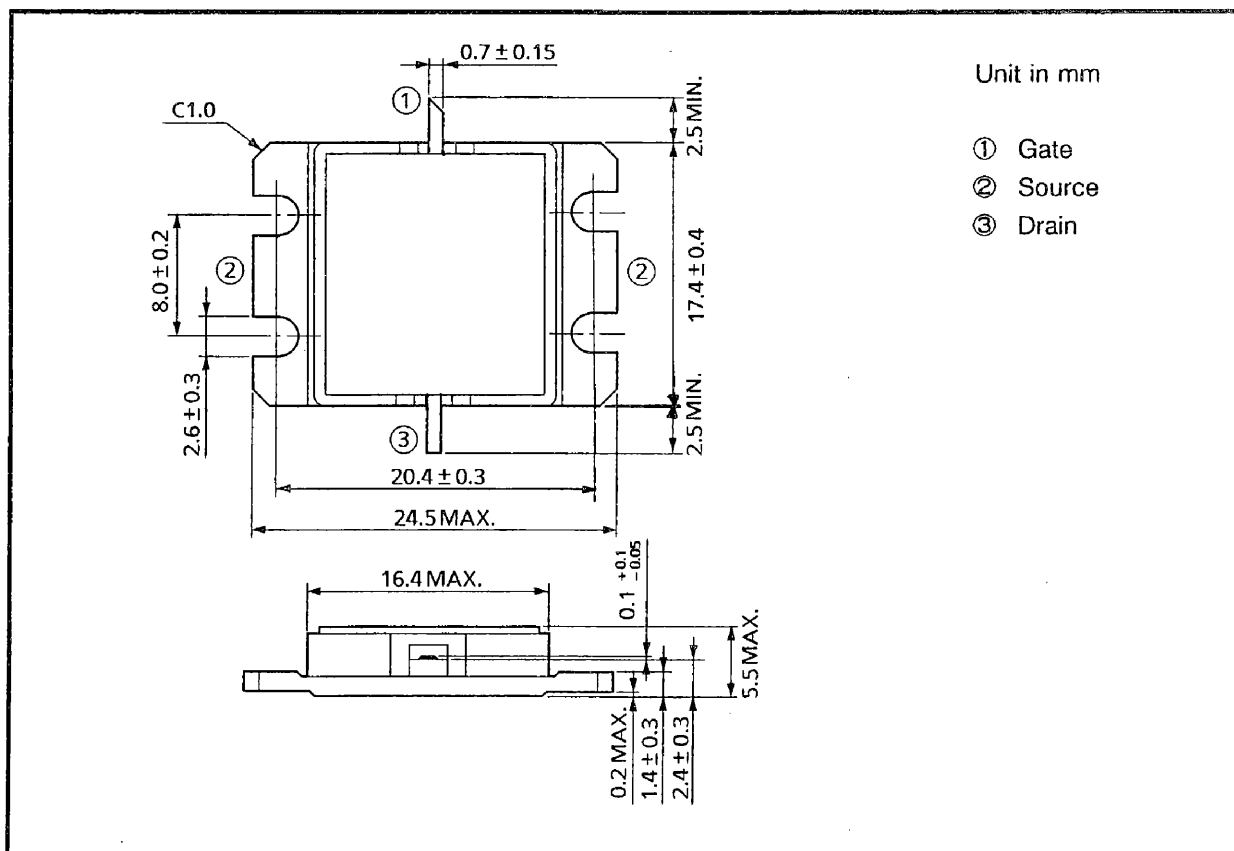
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TPM2323-30

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V _{DS}	V	15
Gate-Source Voltage	V _{GS}	V	-5
Drain Current	I _{DS}	A	26
Total Power Dissipation (T _C = 25°C)	P _T	W	100
Channel Temperature	T _{ch}	°C	175
Storage Temperature	T _{stg}	°C	-65~175

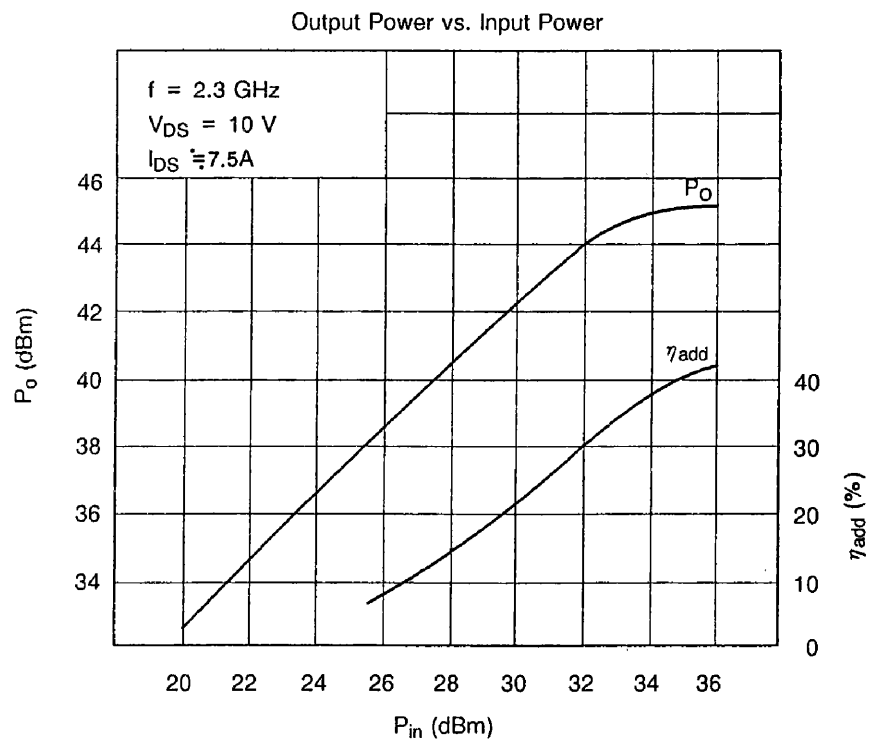
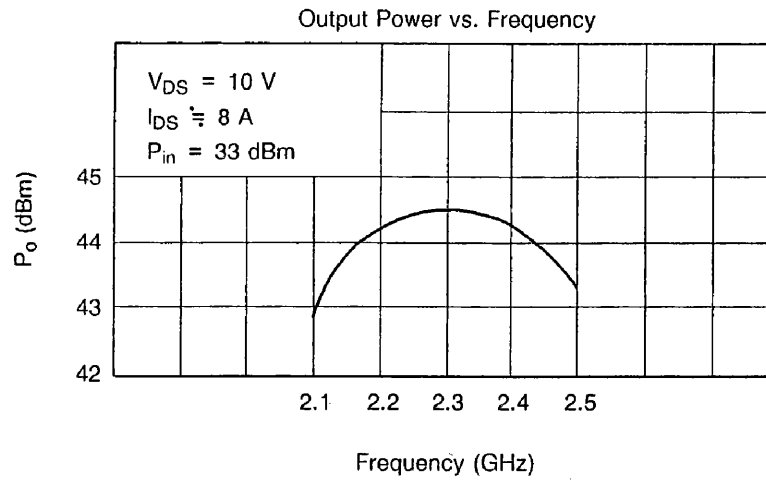
PACKAGE OUTLINE (2-16G1B)



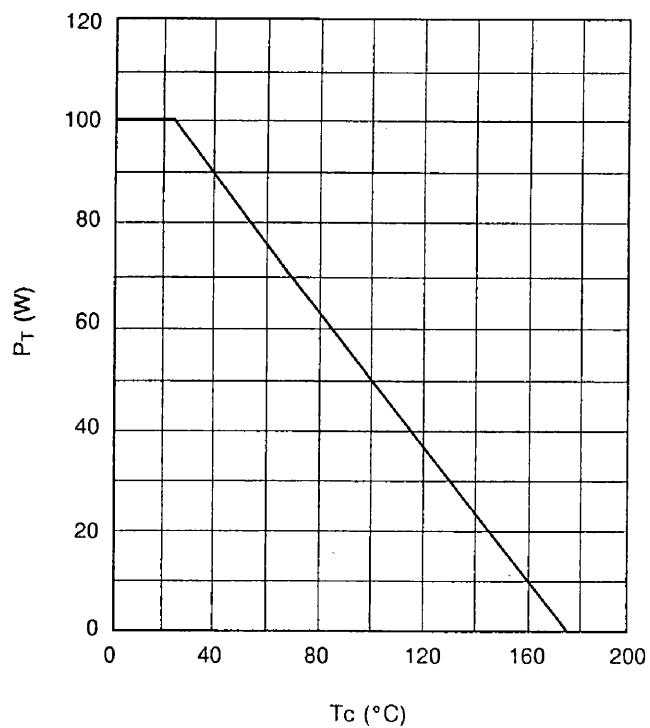
HANDLING PRECAUTIONS FOR PACKAGED TYPE

Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES



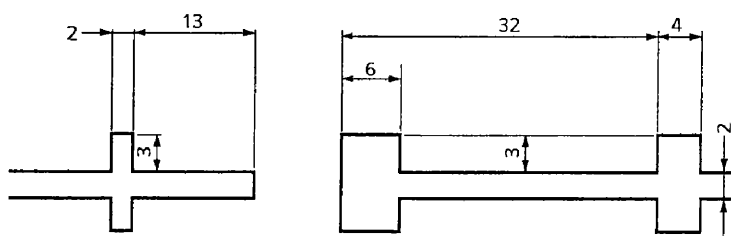
POWER DISSIPATION VS. CASE TEMPERATURE



DRAWING OF MATCHING NETWORK

INPUT

OUTPUT



Substrate Material : Teflon ($\epsilon_r = 2.8$)

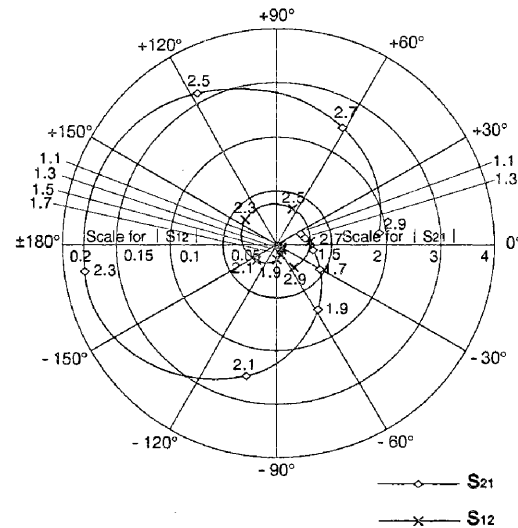
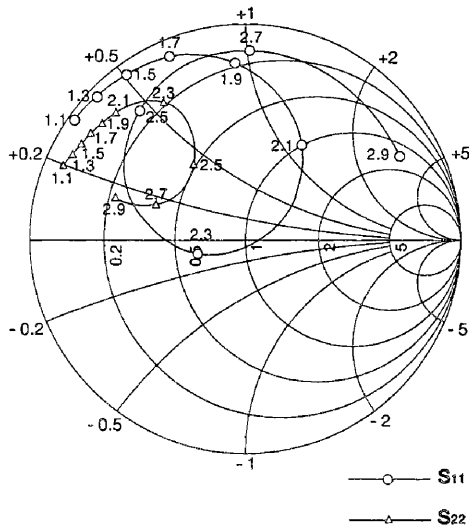
Thickness : 0.76 mm

TPM2323-30

TPM2323-30 S-PARAMETERS (MAG.and ANGLES)

$V_{DS} = 10V, I_{DS} = 8.0A$

$f = 1.1 \sim 2.9GHz$



FREQUENCY (GHz)	S ₁₁		S ₁₂		S ₂₁		S ₂₂	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.1	0.976	145.2	0.003	-8.8	0.478	22.8	0.920	157.1
1.3	0.965	136.4	0.004	-20.0	0.535	8.0	0.908	153.0
1.5	0.949	126.3	0.006	-35.9	0.660	-9.0	0.892	148.9
1.7	0.913	113.1	0.008	-57.9	0.913	-29.8	0.870	145.0
1.9	0.817	93.7	0.013	-90.8	1.441	-58.3	0.850	141.2
2.1	0.513	59.0	0.024	-141.4	2.534	-102.9	0.849	135.5
2.3	0.228	-164.4	0.037	142.0	3.634	-172.5	0.741	120.6
2.5	0.755	135.3	0.036	66.6	3.189	118.2	0.432	124.4
2.7	0.868	88.5	0.031	5.2	2.461	61.2	0.452	157.5
2.9	0.817	28.3	0.026	-52.7	1.889	6.4	0.645	161.4