

# Linear Power Transistor, 40W

## 850 - 1450 MHz

PH0814-40

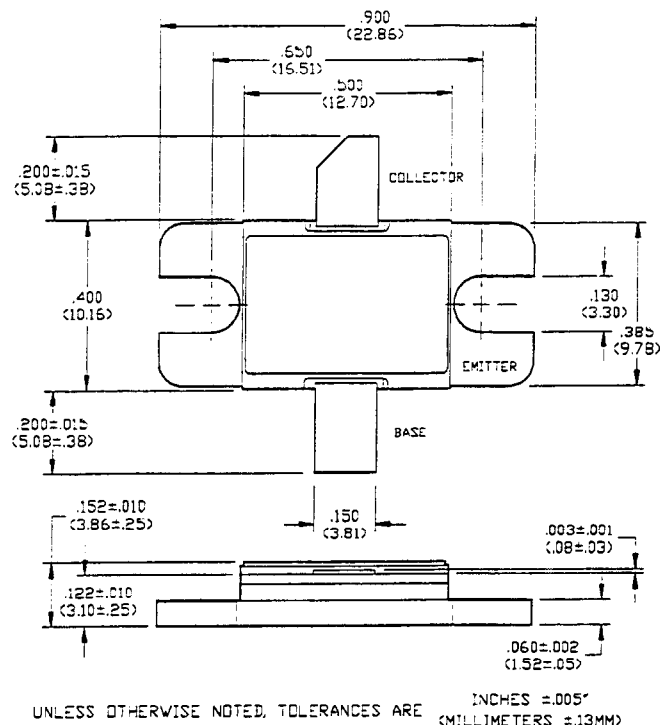
V2.00

### Features

- NPN Silicon Microwave Power Transistor
- Common Emitter Configuration
- Broadband Class AB Operation
- Interdigitated Geometry
- Diffused Emitter Ballasting Resistors
- Gold Metalization System
- Internal Input and Output Impedance Matching
- Hermetic Metal/Ceramic Package

### Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Base Voltage	$V_{CBO}$	56	V
Collector-Emitter Voltage	$V_{CES}$	56	V
Emitter-Base Voltage	$V_{EBO}$	3.0	V
Collector Current (Peak)	$I_C$	5.6	A
Total Power Dissipation	$P_{TOT}$	175	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	$T_{STG}$	-55 to +200	°C
Thermal Resistance	$\theta_{JC}$	1.0	°C/W



### Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	$BV_{CES}$	56	-	V	$I_C=50$ mA
Collector-Emitter Leakage Current	$I_{CES}$	-	5.0	mA	$V_{CE}=28$ V
Collector-Base Breakdown Voltage	$BV_{CBO}$	56	-	V	$I_C=50$ mA
Emitter-Base Breakdown Voltage	$BV_{EBO}$	3.0	-	V	$I_B=10$ mA
DC Forward Current Gain	$h_{FE}$	15	100	-	$V_{CE}=5.0$ V, $I_C=0.5$ A
Input Power	$P_{IN}$	5.5	8.8	W	$V_{CC}=28$ V, $I_{CO}=12$ mA, $P_{OUT}=42$ W, $F=1450$ MHz
Collector Current	$I_C$	-	3.75	A	$V_{CC}=28$ V, $I_{CO}=12$ mA, $P_{OUT}=42$ W, $F=1450$ MHz
Input Return Loss	RL	10	-	dB	$V_{CC}=28$ V, $I_{CO}=12$ mA, $P_{OUT}=42$ W, $F=1450$ MHz
Saturated Output Power	$P_{SAT}$	50	-	W	$V_{CC}=28$ V, $I_{CO}=12$ mA, $F=1450$ MHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=28$ V, $I_{CO}=12$ mA, $P_{OUT}=42$ W, $F=1450$ MHz
Load Mismatch Tolerance	VSWR-T	-	1.5:1	-	$V_{CC}=28$ V, $I_{CO}=12$ mA, $P_{OUT}=42$ W, $F=850$ MHz

### Typical Optimum Device Impedances

F(MHz)	$Z_{in}(\Omega)$	$Z_{out}(\Omega)$
850	2.0 - j3.6	3.0 - j4.9
950	2.4 - j2.5	2.3 - j3.1
1050	3.1 - j1.8	2.0 - j2.0
1150	3.5 - j1.9	1.8 - j1.4
1250	3.3 - j2.4	1.7 - j0.9
1350	2.5 - j2.4	1.4 - j0.5
1450	1.7 - j1.8	1.2 - j0.1

