

# FERRITE CIRCULATORS AND ISOLATORS

869–1990 MHz

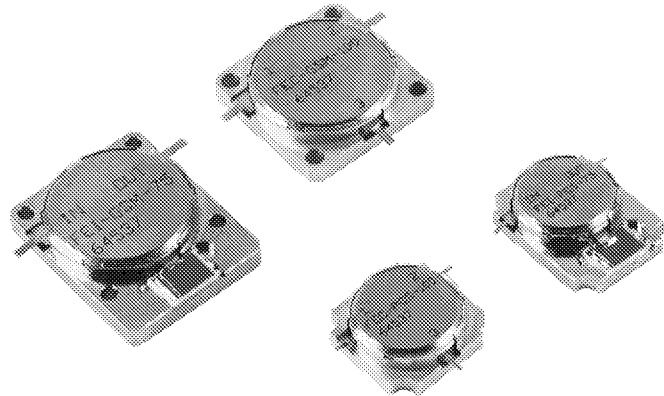
# SERIES FEC/FEI

LOW PROFILE

## GENERAL INFORMATION

The "FEC" and "FEI" series offer drop-in or surface mount isolators and circulators that will accommodate most cellular and PCS applications. Our low profile, side magnet design offers a compact package with excellent isolation versus insertion loss characteristics.

KDI has taken advantage of its many years of experience to custom design a termination which creates a more perfect third port match to maximize the performance and efficiency of our isolators. This new technology, utilized in conjunction with our existing process controls, enables KDI to produce a consistently superior product with excellent unit to unit repeatability and phase consistency (typically  $\pm 5$  degrees where specified).



## FEATURES

- High isolation versus insertion loss characteristics
- Custom designs in narrow-band frequency ranges from 400 to 4000 MHz
- Excellent repeatability and unit to unit phase consistency
- Stable over wide temperature extremes
- Commercial, military or space level requirements
- Precision test fixturing available
- High volume manufacturing facility
- Excellent affordability
- Custom tuned KDI terminations
- Full qualification facilities on premises
- Integration with other KDI products available

## TYPICAL SPECIFICATIONS

<b>Frequency (Narrow Bands):</b>	869-1990 MHz
<b>Insertion Loss:</b>	0.3 dB Maximum
<b>Isolation:</b>	22 dB Minimum
<b>VSWR</b>	1.20:1 Maximum
<b>Power Handling:</b>	< 1 Watt to 100 Watts
<b>Temperature:</b>	Operating: -10 to +85 (degrees C) Storage: +125°C Maximum
<b>Impedance:</b>	50 Ohms
<b>Package Type:</b>	Drop-in
<b>Materials:</b>	Housing Material: Aluminum Alloy type 6061-T651 Per QQ-A-250/11
<b>Finish:</b>	<b>FEI Series:</b> Electroless Nickel Per MIL-C-26074 Class 1, Grade B .0005/.0007 THK <b>FEC Series:</b> Chemical Film Per MIL-C-5541 Class 3. Input/Output Tabs (All Types) Material: Beryllium Copper Finish: Gold Plate Per MIL-G-45204 Type 1, Grade A, Class 1 (50-100 Microinches)

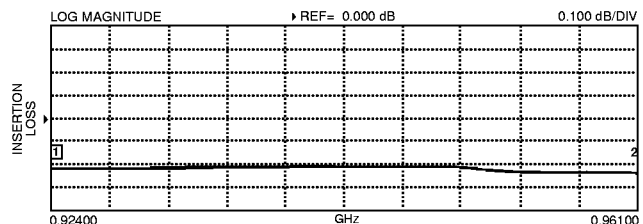
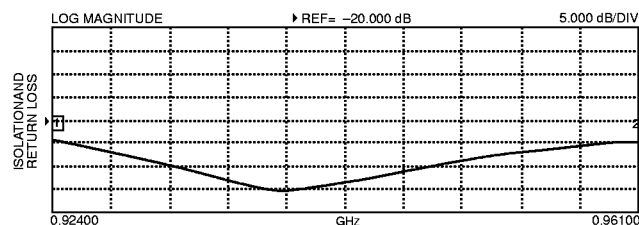
### CELLULAR BANDS

Model No.	Frequency (MHz)	Type/Style CIRC/ISO	Power Avg.	Power (Watts) Peak	Outline	Test Fixture* Model No.
FEC-AMPS-100	869-894	CIRCULATOR	100	500	A	TFC-002
FEI-AMPS-5	869-894	ISOLATOR	5	100	C	TFI-008
FEI-AMPS-75	869-894	ISOLATOR	75	400	β	TFI-008
FEC-GSM-100	925-960	CIRCULATOR	100	500	A	TFC-002
FEI-GSM-5	925-960	ISOLATOR	5	100	C	TFI-008
FEI-GSM-75	925-960	ISOLATOR	75	400	β	TFI-008

### PCN/PCS BANDS

Model No.	Frequency (MHz)	Type/Style CIRC/ISO	Power Avg.	Power (Watts) Peak	Outline	Test Fixture* Model No.
FEC-DCS-100	1805-1880	CIRCULATOR	100	500	D	TFC-001
FEI-DCS-5	1805-1880	ISOLATOR	5	100	G	TFI-004
FEI-DCS-15	1805-1880	ISOLATOR	15	100	F	TFI-005
FEI-DCS-75	1805-1880	ISOLATOR	75	400	E	TFI-006
FEC-PCS-100	1930-1990	CIRCULATOR	100	500	D	TFC-001
FEI-PCS-5	1930-1990	ISOLATOR	5	100	G	TFI-004
FEI-PCS-15	1930-1990	ISOLATOR	15	100	F	TFI-005
FEI-PCS-75	1930-1990	ISOLATOR	75	400	E	TFI-006

\*Supplied as a "set" including a transmission through-line fixture.



KEY: Inches[Millimeters] XX ± .03 XXX ± .010 [X ± 0.8 XX ± 0.25]



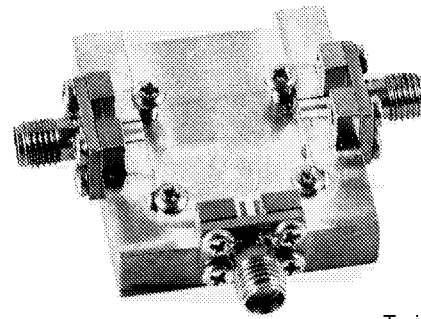
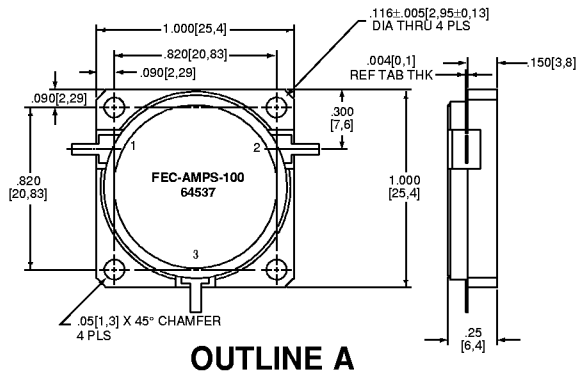
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# FERRITE CIRCULATORS AND ISOLATORS

# SERIES FEC/FEI

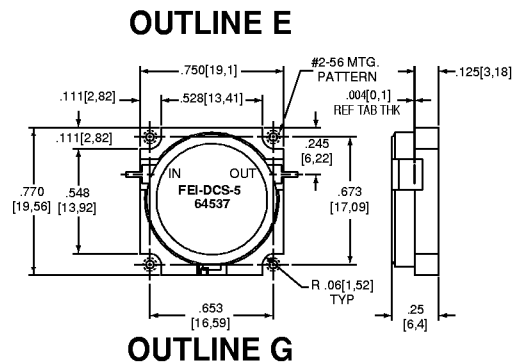
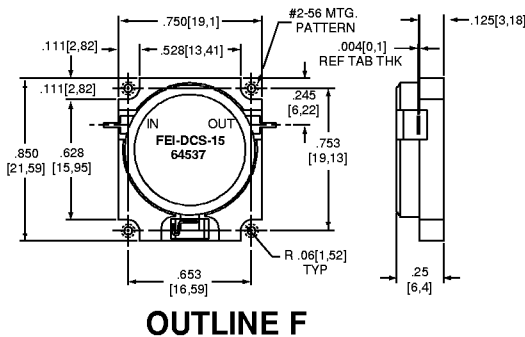
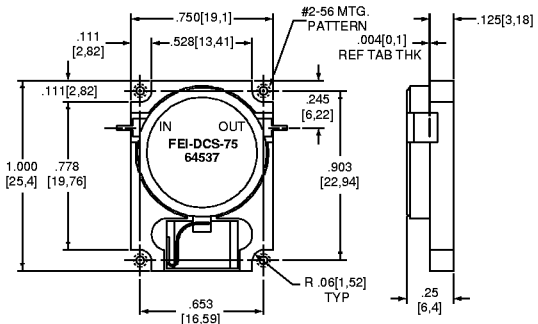
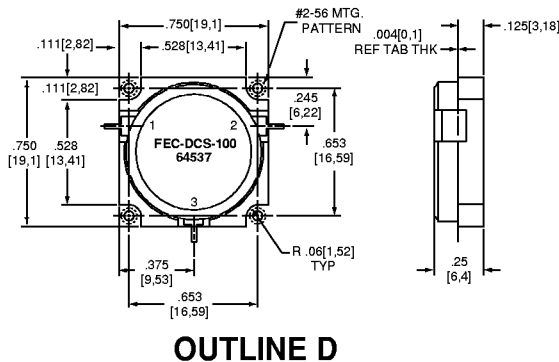
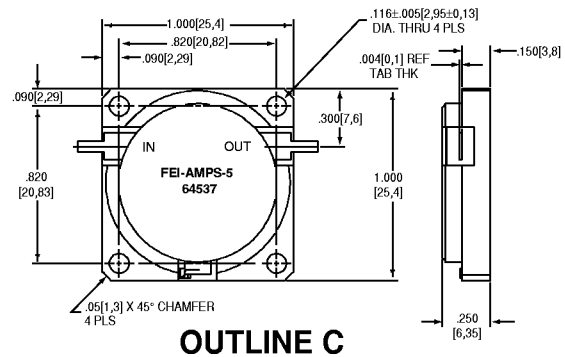
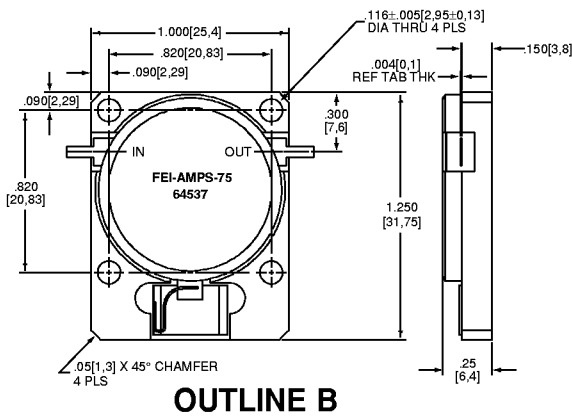
869-1990 MHz



Typical Test Fixture

## TAB DIMENSION

SERIES	WIDTH	LENGTH
	in [mm]	in [mm]
PCS/DCS	.025 [0,64]	.075 [1,9]
AMPS/GSM	.055 [1,40]	.125 [3,18]



KEY: Inches [Millimeters] XX ± .03 XXX ± .010 [X ± 0.8 XX ± 0.25]



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FERRITE

**CIRCULATORS AND ISOLATORS**

**SERIES FEC/FEI**

0.85-13.35 GHz

**ELECTRICAL SPECIFICATIONS**

**DUAL JUNCTION CIRCULATOR**

Model	FE-A20
Frequency:	851-866 MHz
3rd Order Inmod:	-70 dBc
Isolation:	60 dB Minimum (30/Junction)
Insertion Loss:	0.4 dB Maximum (.2/Junction)
VSWR:	1.15:1 Maximum
Temp:	-30° To +50°C Operating -54° To +125°C Storage
Power:	300 Watts Average

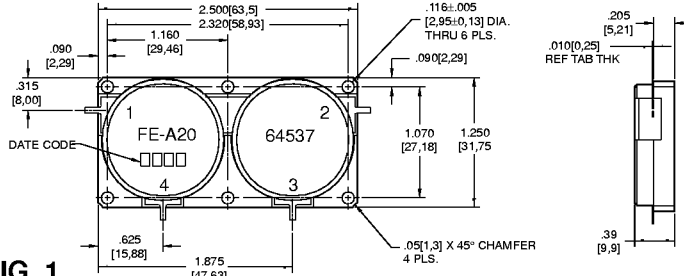


FIG. 1

**ELECTRICAL SPECIFICATIONS**

**HIGH POWER CIRCULATOR**

Model	FE-B36
Frequency:	1.2-1.4 GHz
Impedance:	50 OHM Nominal
Isolation:	19 dB Minimum
Insertion Loss:	0.5 dB Maximum
VSWR:	1.25:1 Maximum
Temp:	-10° To +85°C
Power:	100 Watts Average 1 Kw Peak

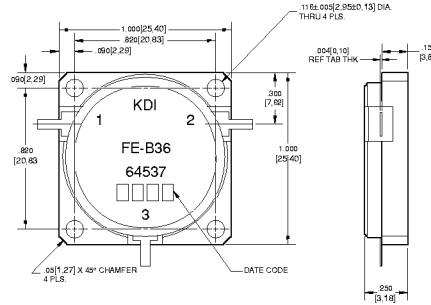


FIG. 2

**ELECTRICAL SPECIFICATIONS**

**HIGH POWER ISOLATOR**

Model	FE-B37
Frequency:	1.626-1.660 GHz
Isolation:	20 dB Minimum
Insertion Loss:	0.4 dB Maximum
VSWR:	1.20:1 Maximum
Temp:	-40° To +70°C Operating -40° To +85°C Storage
Power:	50 Watts Average

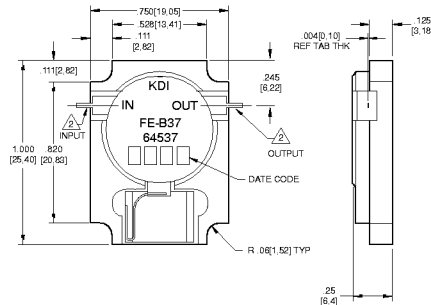


FIG. 3

**ELECTRICAL SPECIFICATIONS**

**LOW POWER ISOLATOR**

Model	FE-A06
Frequency:	1.85-1.99 GHz
Isolation:	20 dB Minimum
Insertion Loss:	0.4 dB Typ. 0.5 dB Maximum
VSWR:	1.25:1 Maximum
Temp:	-10° To +85°C Operating -40° To +125°C Storage
Power:	2 Watts Average

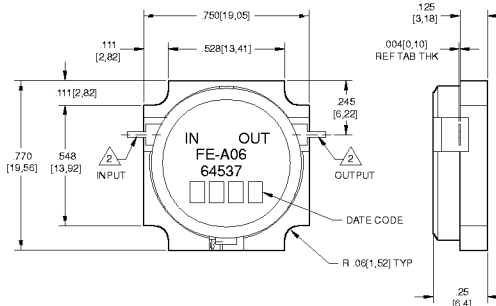


FIG. 4

**ELECTRICAL SPECIFICATIONS**

**DUAL JUNCTION CIRCULATOR**

Model	FE-A19
Frequency:	2.4-2.484 MHz
Isolation:	20 dB Minimum
Insertion Loss:	0.3 dB TYP 0.5 db Maximum
VSWR:	1.20:1 Maximum
Temp:	-30° To +85°C Operating -40° To 125°C Storage
Power:	5 Watts Average 3 Watts Reflected



FIG. 5

KEY: Inches[Millimeters] XX ±.03 XXX ±.010 [X ±0.8 XX ±0.25]



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