

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 ± 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

Frequency (Narrow Bands): 869-1990 MHz

Insertion Loss: 0.3 dB Maximum

Isolation: 22 dB Minimum

VSWR: 1.20:1 Maximum

Power Handling: < 1 Watt to 100 Watts

Temperature: Operating: -10 to $+85$ (degrees C)
Storage: $+125^{\circ}\text{C}$ Maximum

Impedance: 50 Ohms

Package Type: Drop-in

Materials: Housing Material: Aluminum Alloy
type 6061-T651 Per QQ-A-250/11

Finish: **FEI Series:** Electroless Nickel Per MIL-C-26074 Class 1, Grade B .0005/.0007 THK

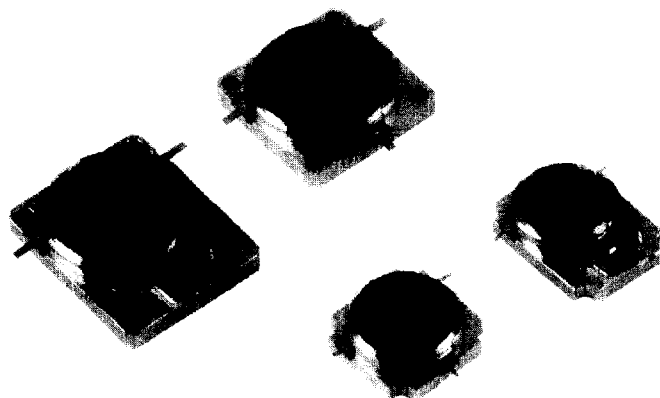
FEC Series: Chemical Film Per MIL-C-5541 Class 3.

Input/Output Tabs (All Types)

Material: Beryllium Copper

Finish: Gold Plate Per MIL-G-45204

Type 1, Grade A, Class 1 (50-100 Microinches)



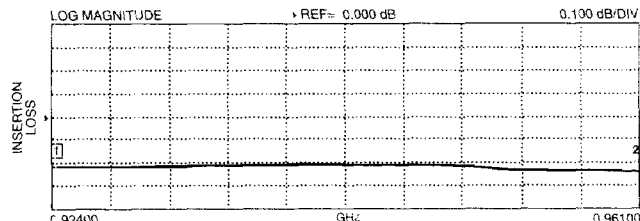
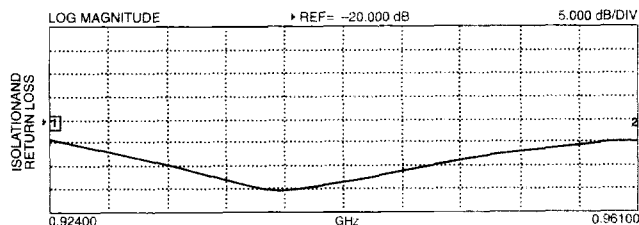
CELLULAR BANDS

Model No.	Frequency (MHz)	Type/Style CIRC/ISO	Power Avg.	(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	B	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	B	TFI-008

PCN/PCS BANDS

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.



KDI/TRIANGLE
An MCE Company CORPORATION

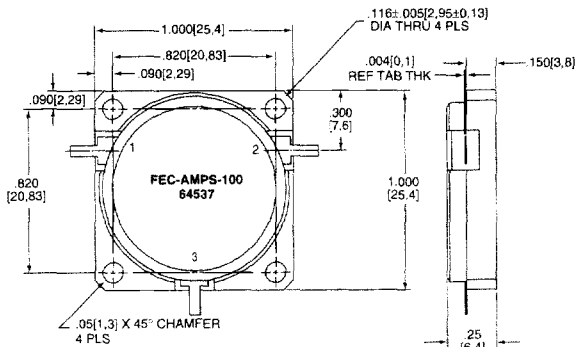
60 South Jefferson Road, Whippany, NJ 07981
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FERRITE

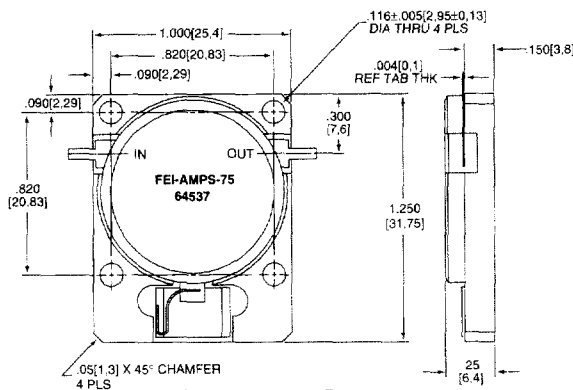
CIRCULATORS AND ISOLATORS

869-1990 MHz

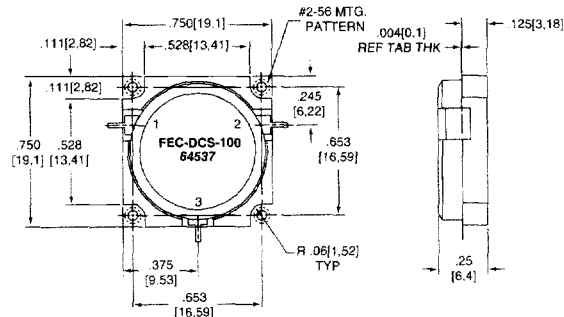
SERIES FEC/FEI



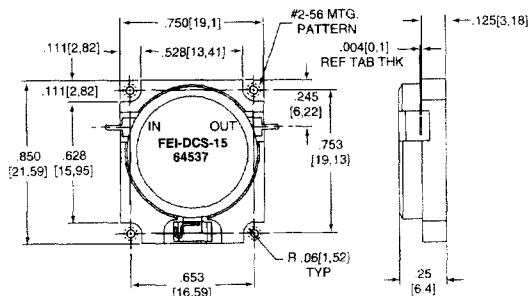
OUTLINE A



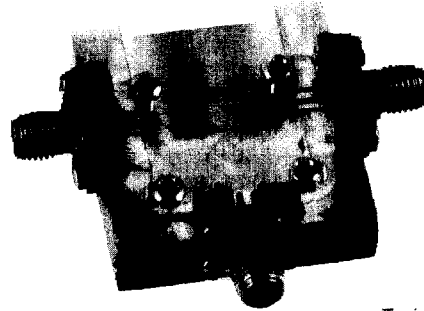
OUTLINE B



OUTLINE D



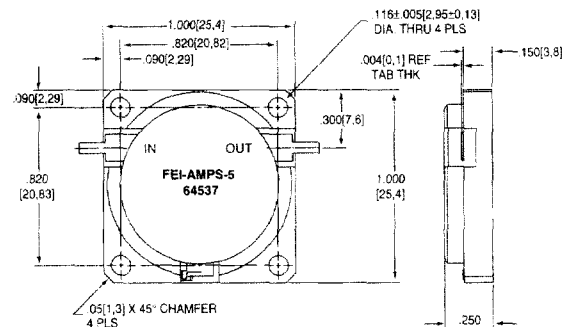
OUTLINE F



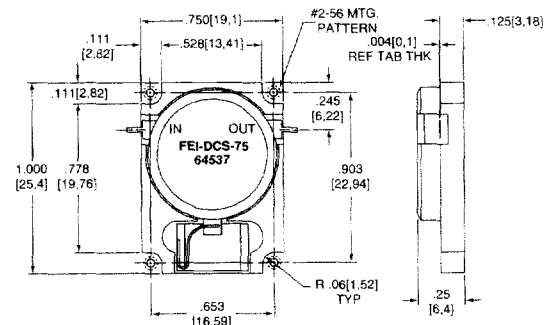
Typical Test Fixture

TAB DIMENSION

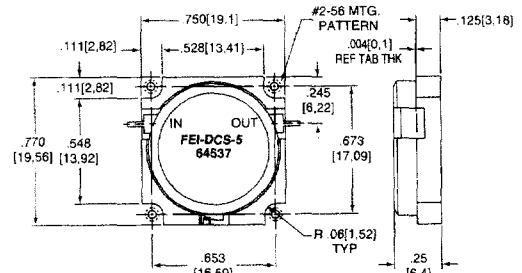
SERIES	WIDTH in[mm]	LENGTH in[mm]
PCS/DCS	.025[0.64]	.075[1.9]
AMPS/GSM	.055[1.40]	.125[3.18]



OUTLINE C



OUTLINE E



OUTLINE G



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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

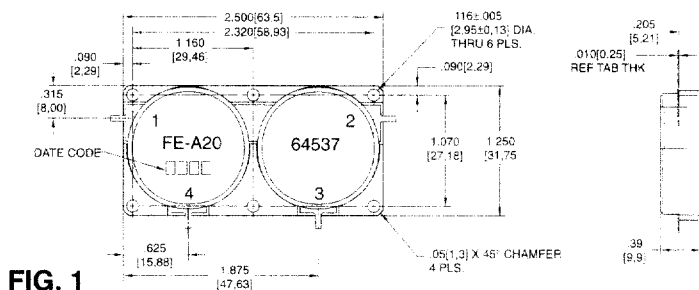


FIG. 1

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

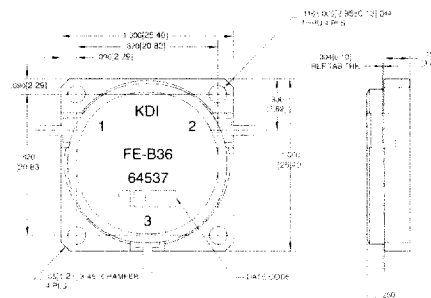


FIG. 2

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

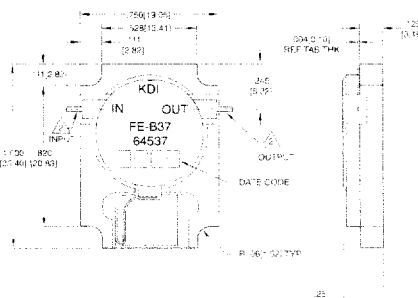


FIG. 3

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

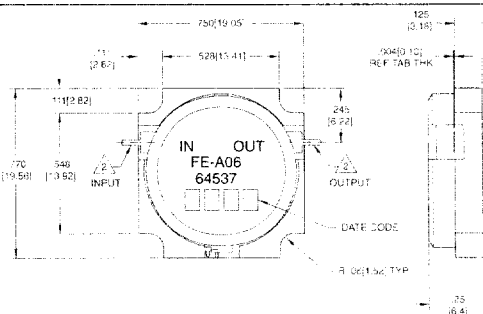


FIG. 4

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

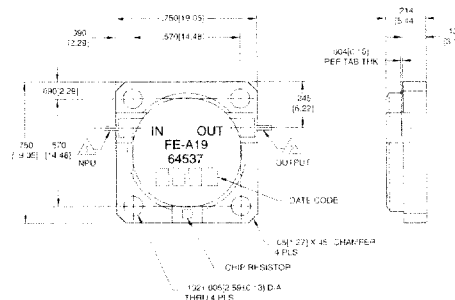


FIG. 5

KEY: Inches (Millimeters) .001 = .0254 (0.01) X .001 = .000254 (0.01)



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SERIES FEC/FEI

0.85–13.35 GHz

ELECTRICAL SPECIFICATIONS

LOW POWER ISOLATOR

Model	FE-B38
Frequency:	2.8-3.0 MHz
Isolation:	20 dB Minimum
Insertion Loss:	0.3 dB Goal 0.4 dB Maximum
VSWR:	1.20:1 Maximum
Temp:	-10° To +85°C Operating
Power:	5 Watts Average 500 Watts Peak

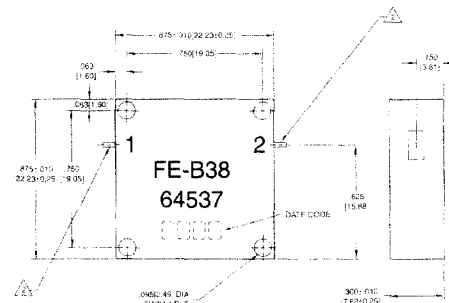


FIG. 6

ELECTRICAL SPECIFICATIONS

LOW POWER ISOLATOR

Model	FE-B39
Frequency:	3.4-3.6 GHz
Isolation:	20 dB Minimum
Insertion Loss:	0.3 dB Maximum
VSWR:	1.20:1 Maximum
Temp:	-10° To +80°C
Power:	1 Watts Average

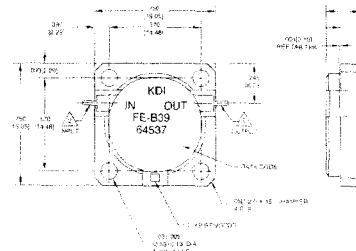


FIG. 7

ELECTRICAL SPECIFICATIONS

HIGH POWER ISOLATOR

Model	FE-B40
Frequency:	3.4-3.6 GHz
Isolation:	20 dB Minimum
Insertion Loss:	0.3 dB Maximum
VSWR:	1.20:1 Maximum
Temp:	-10° To +80°C Operating
Power:	75 Watts Average

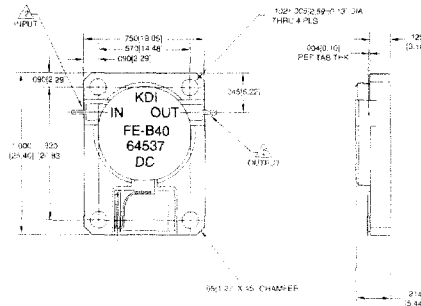


FIG. 8

ELECTRICAL SPECIFICATIONS

LOW POWER ISOLATOR

Model	FE-A16
Frequency:	2.70-3.00 GHz
Isolation:	20 dB Minimum
Insertion Loss:	0.4 dB Maximum
VSWR:	1.25:1 Maximum
Temp:	-20° To +55°C Operating -25° To +75°C Storage
Power:	1 Watt Average

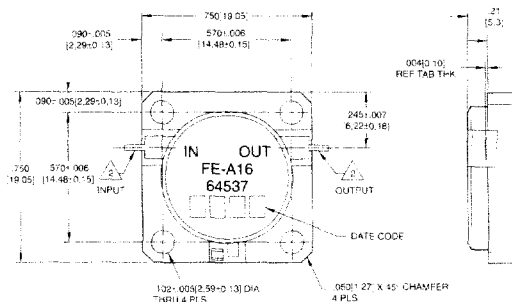
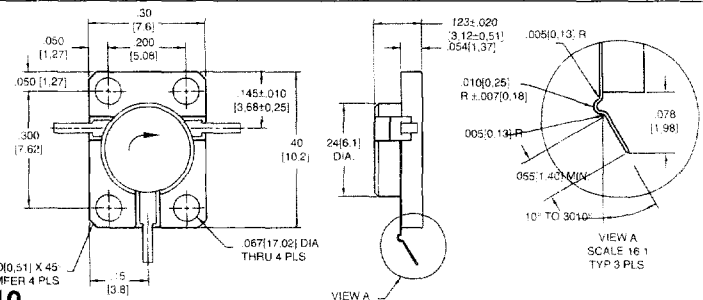


FIG. 9

ELECTRICAL SPECIFICATIONS

KU BAND CIRCULATOR

Model	FE-A09
Frequency:	13.3-13.35 GHz
Impedance:	50 OHM Nominal
Isolation:	20 dB Minimum
Insertion Loss:	0.4 dB Maximum
VSWR:	1.15:1 Maximum
Temp:	-57° To +71°C Operating -62° To +85°C Storage
Power:	2 Watts Average



CHAMFER
FIG. 10



KDI / **TRIANGLE**
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