

INTELLIGENT INTERACTIVE SYNTHESIZER

SURFACE MOUNT MODEL: MFSH490517-100

OPTIMIZED LOOP PARAMETER

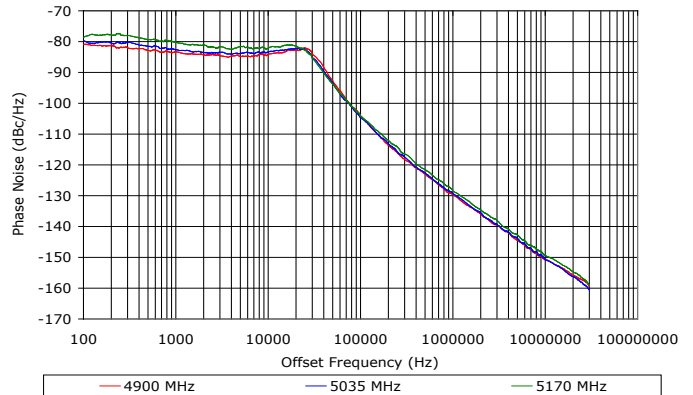
4900 - 5170 MHz

FEATURES:

- ▶ Small Size, Surface Mount (0.6" x 0.6")
- ▶ Exceptionally Low Phase Noise
- ▶ Standard Programming Interface
- ▶ Ultra Wide Tuning Range
- ▶ Lead Free - RoHS Compliant
- ▶ Patented REL-PRO® Technology
- ▶ Buffered Output



Phase Noise



SPECIFICATION (Rev. B 04/22/11)

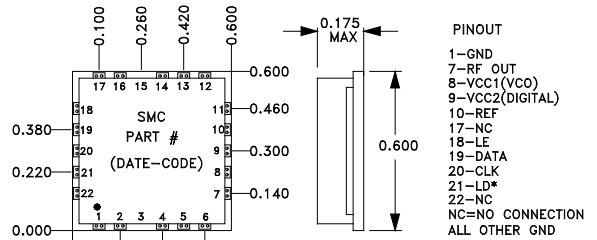
Frequency	4900 - 5170 MHz		
Step Size	1 MHz		
Reference Input Frequency	10 MHz ¹		
Reference Input Voltage	0.5 V p-p to 1.0 V p-p		
Bias Voltage	Vcc	V (Vdc)	I (mA Max.)
	VCO	+5	55
	Digital	+3	18
Output Power	+6 dBm (Min.)		
Spurious Suppression	-65 dB (Typ.)		
Harmonic Suppression	48 dB (Typ.)		
Settling Time	5 mSec (Max.) ²		
Output Impedance	50 Ohms (Nom.)		
Lock Detect Indicator	CMOS 3.0 V		
Typical Phase Noise	Offset	Phase Noise	
	@ 10 kHz	-83 dBc/Hz	
	@ 100 kHz	-104 dBc/Hz	
Operating Temperature Range	-40 to +85 °C		
Programming	See Application Note: AN7500		

¹ Reference input frequency is programmable (See AN7500) in multiples of the step size, 10 MHz is the factory default setting. 150 MHz (Max.)
² From the rising edge of LE to stable lock detect

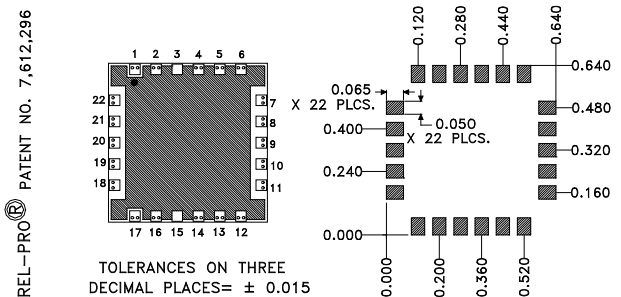
Absolute Maximum Ratings

Storage Temp. Range	-55 to +125 °C
Bias Voltage (Digital)	+3.6 V
Bias Voltage (VCO)	+5.5 V
DC Voltage Applied to RF Out	±25 V

Package # 366



RECOMMENDED PCB LAYOUT



PACKAGE MOUNTING: SEE APPLICATION NOTE AN7200 & AN7300

* High when locked (source/sink 500uA)

This product is manufactured under one or more of the following patents: Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

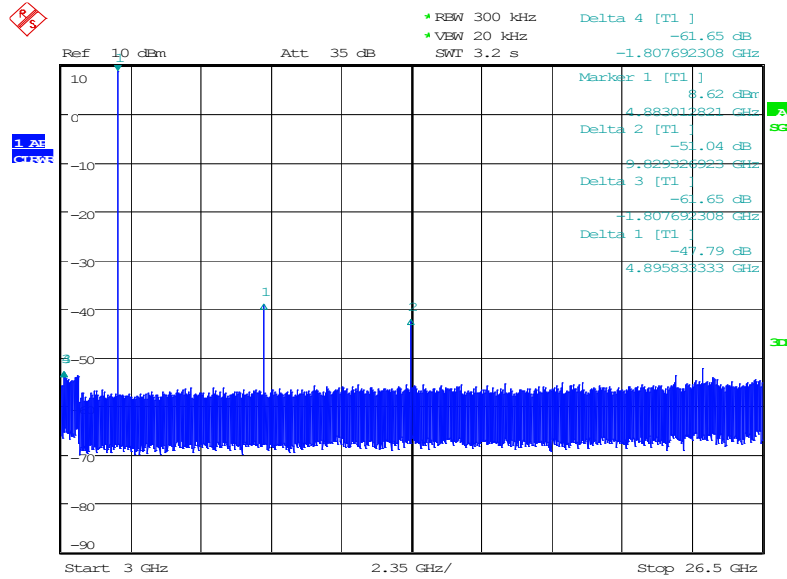
INTELLIGENT INTERACTIVE SYNTHESIZER

SURFACE MOUNT MODEL: MFSH490517-100

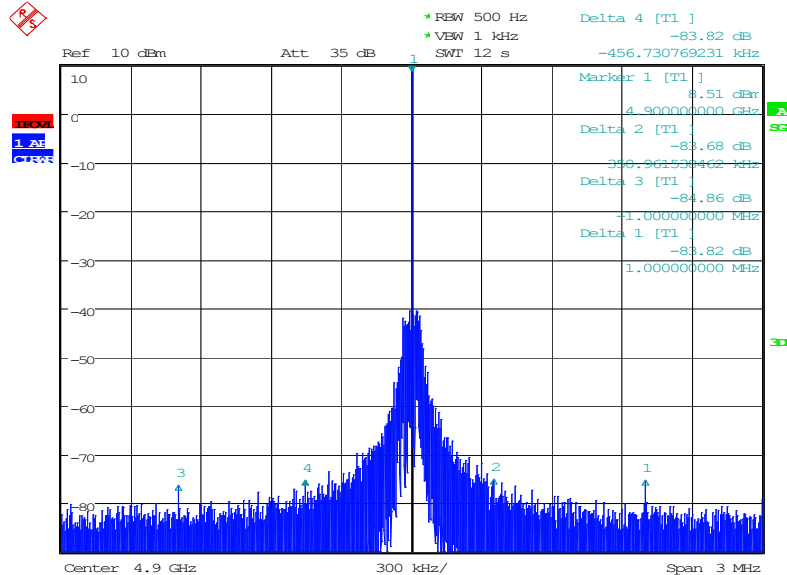
OPTIMIZED LOOP PARAMETER

4900 - 5170 MHz

HARMONIC SUPPRESSION



REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

This product is manufactured under one or more of the following patents: Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

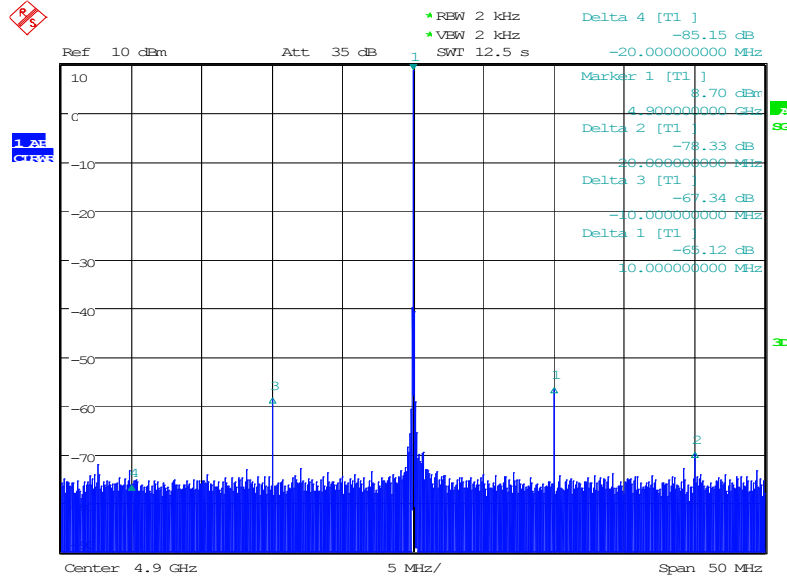
INTELLIGENT INTERACTIVE SYNTHESIZER

SURFACE MOUNT MODEL: MFSH490517-100

OPTIMIZED LOOP PARAMETER

4900 - 5170 MHz

REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

This product is manufactured under one or more of the following patents. Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

Copyright © Synergy Microwave Corporation
201 McLean Boulevard • Paterson, New Jersey 07504 USA • Tel: (973) 881-8800 • Fax: (973) 881-8361
E-Mail: sales@synergymw.com • World Wide Web: http://www.synergymw.com



INTELLIGENT INTERACTIVE SYNTHESIZER

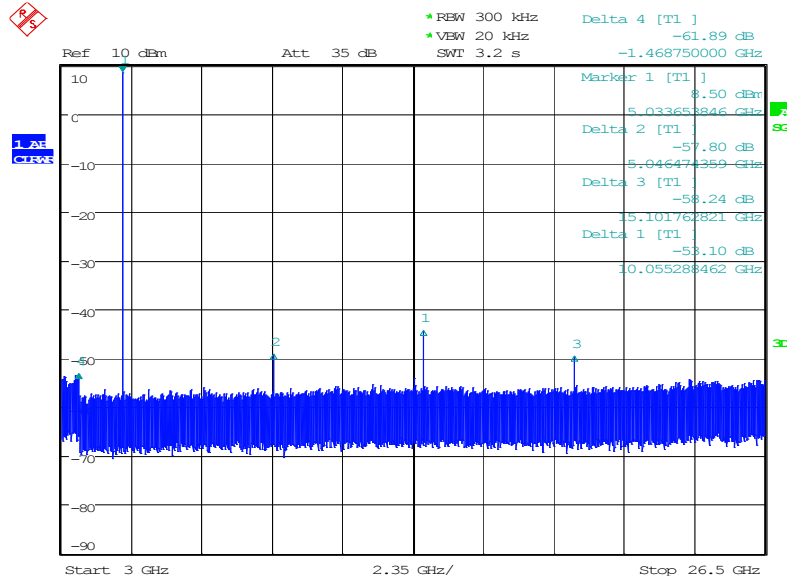
SURFACE MOUNT MODEL: MFSH490517-100

OPTIMIZED LOOP PARAMETER

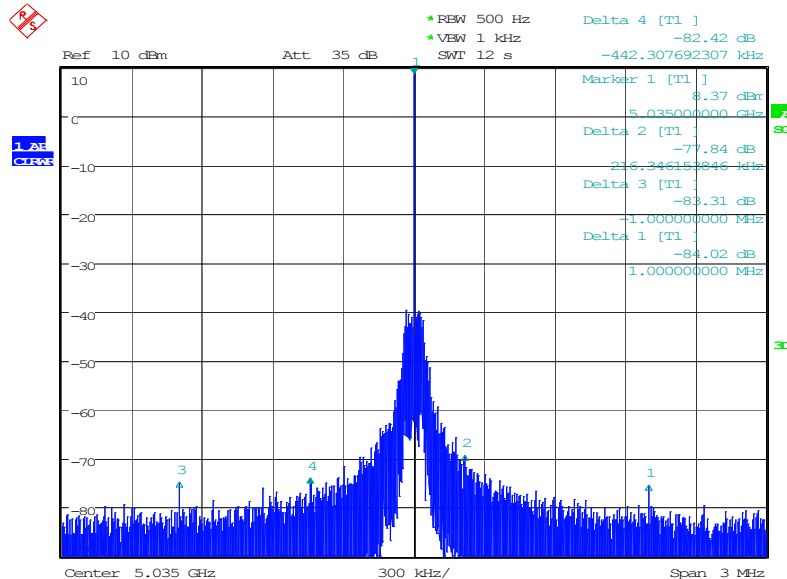
4900 - 5170 MHz

PERFORMANCE PLOTS

HARMONIC SUPPRESSION



REFERENCE SIDEBAND SUPPRESSION



This product is manufactured under one or more of the following patents: Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

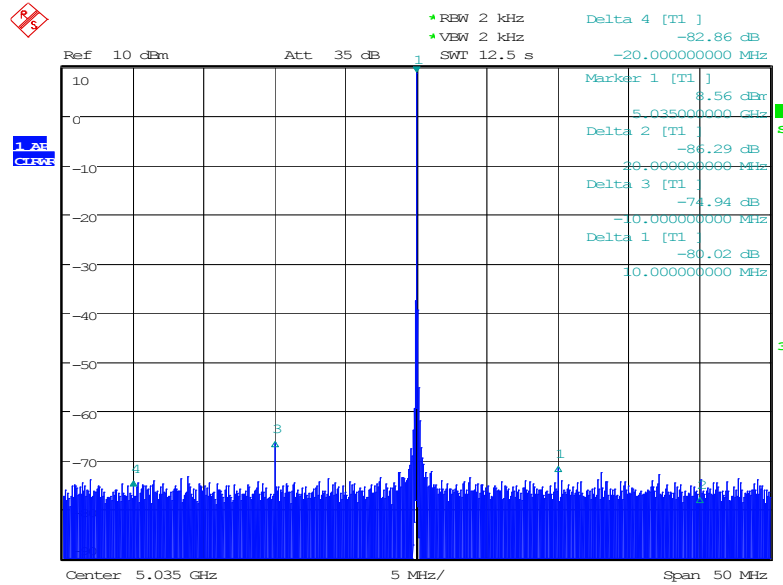
INTELLIGENT INTERACTIVE SYNTHESIZER

SURFACE MOUNT MODEL: MFSH490517-100

OPTIMIZED LOOP PARAMETER

4900 - 5170 MHz

REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

This product is manufactured under one or more of the following patents. Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

Copyright © Synergy Microwave Corporation
201 McLean Boulevard • Paterson, New Jersey 07504 USA • Tel: (973) 881-8800 • Fax: (973) 881-8361
E-Mail: sales@synergymwave.com • World Wide Web: http://www.synergymwave.com



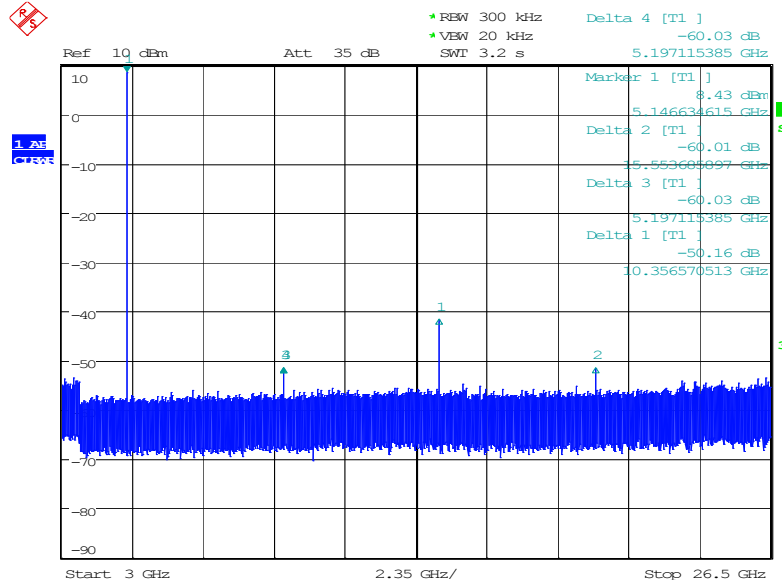
INTELLIGENT INTERACTIVE SYNTHESIZER

SURFACE MOUNT MODEL: MFSH490517-100

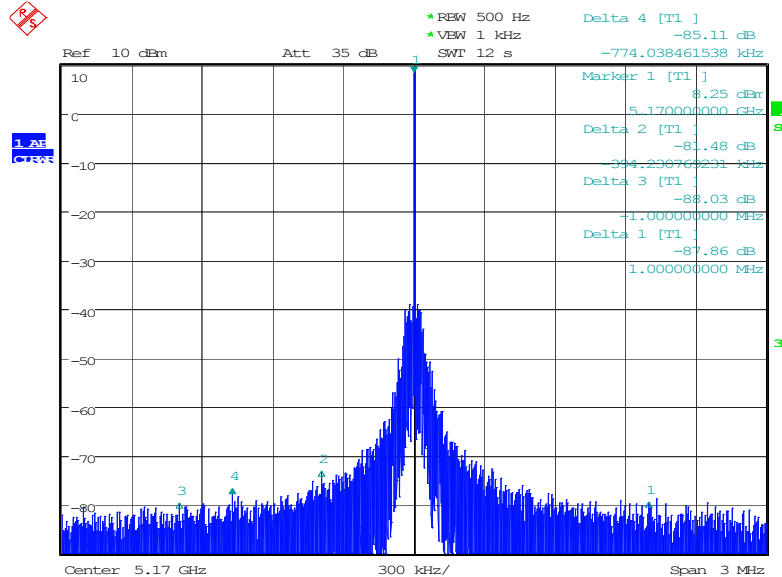
OPTIMIZED LOOP PARAMETER

4900 - 5170 MHz

HARMONIC SUPPRESSION



REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

This product is manufactured under one or more of the following patents: Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

Copyright © Synergy Microwave Corporation
2011 McLean Boulevard • Paterson, New Jersey 07504 USA • Tel: (973) 881-8800 • Fax: (973) 881-8361
E-Mail: sales@synergymw.com • World Wide Web: http://www.synergymw.com



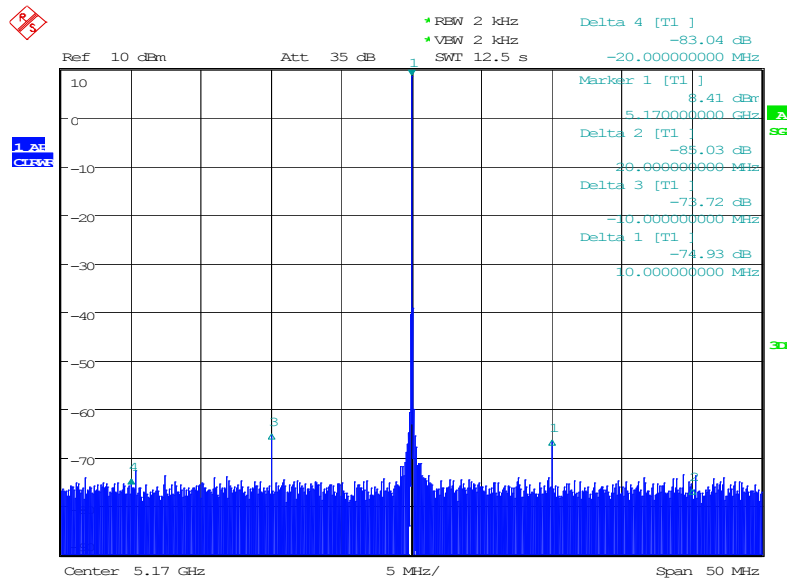
INTELLIGENT INTERACTIVE SYNTHESIZER

SURFACE MOUNT MODEL: MFSH490517-100

OPTIMIZED LOOP PARAMETER

4900 - 5170 MHz

REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

This product is manufactured under one or more of the following patents. Approved: 5,160,810; 5,122,621; 5,390,349; 5,416,449; 5,650,754; 5,805,431; 6,525,623; 6,850,575; 7,088,189; 7,180,381; 7,196,591; 7,262,670; 7,265,642; 7,292,113; 7,365,612; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 7,580,693; 7,586,381; 7,605,670; 7,636,021; 2,533,623 | Pending: 60/493075; 60/501371 & 60/501790; 60/527957 & 60/528670; 60/563481; 60/564173; 60/589090; 60/601823; 60/605791; EV31369834; 11/259766; 60/622485 & 60/710310; 10/937525/60/736901; 60/732787; 7,495,525; 2,548,311; 2,548,317; 7,545,229; 2,563,174; 7,580,693; 7,612,296; 2,524,751

Copyright © Synergy Microwave Corporation
 201 McLean Boulevard • Paterson, New Jersey 07504 USA • Tel: (973) 881-8800 • Fax: (973) 881-8361
 E-Mail: sales@synergymw.com • World Wide Web: http://www.synergymw.com

