

Radio Frequency

Technologies for Innovative Solutions



Selection Guide

STMicroelectronics
More Intelligent Solutions



LDMOS IN PLASTIC

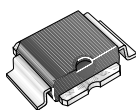
HF to 2000 MHz Class AB Common Source - PowerSO-10RF

VHF/UHF Radio and Digital Cellular BTS Applications

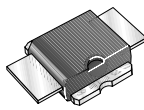
P/N	Freq. MHz	Pout W	Gain (typ) dB	V _{DD} V	Class	Eff. (Typ) %	Package
PD54003	500	3	12	7.5	AB	55	PowerSO-10RF*
PD54008	500	8	11.5	7.5	AB	55	PowerSO-10RF*
PD55003	500	3	16	12.5	AB	52	PowerSO-10RF*
PD55008	500	8	17	12.5	AB	55	PowerSO-10RF*
PD55015	500	15	14	12.5	AB	55	PowerSO-10RF*
PD55025S	500	25	14.5	12.5	AB	58	PowerSO-10RF
PD55035S	500	35	16.9	12.5	AB	62	PowerSO-10RF
PD57002	960	2	15	28	AB	55	PowerSO-10RF*
PD57006	945	6	15	28	AB	50	PowerSO-10RF*
PD57018	945	18	16.5	28	AB	53	PowerSO-10RF*
PD57030S	945	30	15	28	AB	60	PowerSO-10RF
PD57045S	945	45	14.5	28	AB	52	PowerSO-10RF
PD57060S	945	60	14.3	28	AB	54	PowerSO-10RF
PD57070S	945	70	14.7	28	AB	50	PowerSO-10RF
LET9045S*	960	45	18	28	AB	64	PowerSO-10RF
LET9060S*	960	60	17	28	AB	63	PowerSO-10RF
LET20015*	2000	15	12	26	AB	45	PowerSO-10RF*
LET20030S*	2000	30	11	26	AB	45	PowerSO-10RF

* In development

• Available in Straight Lead version by adding S suffix



**PowerSO-10RF
Formed Lead**



**PowerSO-10RF
Straight Lead**

HF to 2000 MHz Class AB Common Source - PowerFLAT

VHF/UHF Radio and Digital Cellular BTS Applications

P/N	Freq. MHz	Pout W	Gain (typ) dB	V _{DD} V	Class	Eff. (Typ) %	Package
PD54003L	500	3	12	7.5	AB	55	PowerFLAT
PD54008L	500	8	11.5	7.5	AB	55	PowerFLAT
PD55003L	500	3	16	12.5	AB	52	PowerFLAT
PD55008L	500	8	17	12.5	AB	55	PowerFLAT
LET9002*	960	2	15	28	AB	55	PowerFLAT
LET9006*	960	6	15	28	AB	50	PowerFLAT
LET21004*	2170	4	12	26	AB	50	PowerFLAT
LET21008*	2170	8	12	26	AB	50	PowerFLAT

* In development



PowerFLAT

LDMOS IN CERAMIC

HF to 2000 MHz Class AB Common Source - Ceramic

UHF TV and Digital Cellular BTS Applications

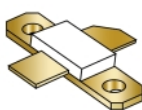
P/N	Freq. MHz	Pout W	Gain (typ) dB	V _{DD} V	Class	Eff. (Typ) %	Rth(j-c) °C/W	Package
SD57030/-01	945	30	15	28	AB	60	1.75	M243 / M250
SD57045/-01	945	45	15	28	AB	55	1.4	M243 / M250
SD57060/-01	945	60	15	28	AB	60	1.1	M243 / M250
SD56120	860	100	16	28	AB	60	0.5	M246
SD56120M	860	120	16	32	AB	60	0.55	M252*
SD57120	960	120	14	28	AB	60	0.55	M252*
SD56150	860	150	16	32	AB	60	0.55	M252*
LET9045C	960	45	18	28	AB	64	1.4	M243
LET9045P	960	45	18	28	AB	64	1.0	M250
LET9060C	960	60	17	28	AB	63	1.1	M243
LET9060P	960	60	17	28	AB	63	0.8	M250
LET9085*	900/960	85	18	26	AB	55	0.7	M265*
LET9130*	900/960	130	16	26	AB	55	0.6	M265*
LET8180*	860/900	180	18	32	AB	55	0.45	M252*
LET19060C*	1880/1990	60	11	26	AB	45	1.0	M265*
LET20030C*	2000	30	11	26	AB	45	2.0	M243*
LET21030C*	2170	30	10	26	AB	45	2.0	*

* In development

* Internally matched



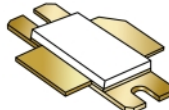
M250



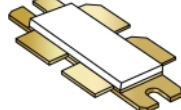
M243



M246



M265



M252

DMOS

2 to 400 MHz Class AB Common Source N Channel MOSFETs

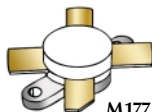
HF/SSB, FM/VHF Broadband Applications

P/N	Freq. MHz	Pout W	Gain min. dB	V _{DD} V	Class	EFF. %	Rth(j-c) °C/W	Package
SD2900	400	5	13.5	28	AB	45	8	M113
SD2902	400	15	12.5	28	AB	45	3	M113
SD2903	400	30	13	28	AB	45	1.75	M229
SD2904	400	30	9.5	28	AB	45	1.75	M113
SD2918	30	30	18	50	AB	50	1	M113
SD2931	175	150	14	50	AB	55	0.6	M174
SD2931-10	175	150	14	50	AB	55	0.45	M174*
SD2932	175	300	15	50	AB	50	0.35	M244
SD2933	30	300	20	50	AB	50	0.27	M177*

*low thermal



M113



M177



M174



M244



M229

BIPOLAR HF

2 to 30 MHz Class AB Linear, Common Emitter, HF/SSB

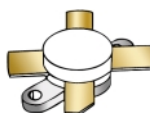
P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Class	R _{th(j-c)} °C/W	IMD dB	Package
SD1405	30	75	13	12.5	AB	0.65	-32	M174*
SD1487	30	100	11	12.5	AB	0.6	-30	M174
SD1407	30	125	15	28	AB	0.65	-30	M174*
SD1407-16	30	125	15	28	AB	0.65	-30	M174•
SD1729	30	130	12	28	AB	1	-30	M174
SD1729-12	30	130	12	28	AB	1	-30	M174•
SD1730	30	220	12	28	AB	0.6	-30	M174
SD1726	30	150	14	50	AB	0.75	-30	M174
SD1727	30	150	14	50	AB	0.75	-30	M164
SD1727-05	30	150	14	50	AB	0.75	-30	M164•
SD1731	30	220	13	50	AB	0.55	-30	M174
SD1728	30	250	14.5	50	AB	0.4	-30	M177
SD1728-01	30	250	14.5	50	AB	0.4	-30	M177•
SD1728-03	30	250	14.5	50	AB	0.4	-30	M177•
SD1728-11	30	250	14.5	50	AB	0.4	-30	M177•
SD1728-15	30	250	14.5	50	AB	0.4	-30	M177•
SD1728-20	30	250	14.5	50	AB	0.4	-30	M177•

* Tested class C

• HFE selection



M174



M177

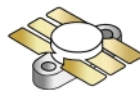


M164

BIPOLAR VHF & UHF

27 to 512 MHz Class C, Common Emitter

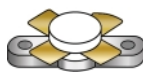
P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Class	R _{th(j-c)} °C/W	Package
SD1446	50	70	10	12.5	C	1.05	M113
SD1405	50	100	7	12.5	C	0.65	M174
SD1274	160	30	10	13.6	C	1.2	M135
SD1274-01	160	30	10	13.6	C	1.2	M113
SD1275	160	40	9	13.6	C	1.2	M135
SD1275-01	160	40	9	13.6	C	1.2	M113
SD1477	175	100	6	12.5	C	0.65	M111
SD1480	136 - 175	125	9.2	28	C	0.65	M111
SD1433	470	10	7	12.5	C	3	M122
SD1488	470	38	5.8	12.5	C	1.5	M111
SD1434	470	45	5	12.5	C	1	M111



M111



M122



M113



M135

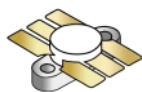


M174

BIPOLAR FM, VHF & UHF TV

88 to 860 MHz Common Emitter, TV Band I, II, III, IV & V

P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Class	R _{th(j-c)} °C/W	IMD dB	Package
SD1457	108	75	10	28	C	1.5	-	M174
SD1460	108	150	9.2	28	C	0.75	-	M174
SD1458	225	14	14	28	A	1.5	-55	M111
SD1455	225	20	8	25	A	1.5	-51	M130
SD1459	225	20	7.5	28	A	1.2	-53	M164
SD1456	225	100	11	28	AB	1.2	-	M168
SD4011	860	4	8	25	A	5.5	-60	M122
SD1732	860	14	8.5	25	A	2.5	-45	M156
SD1490	860	25	8	25	A	1.3	-45	M173
SD4100	860	100	8.5	28	AB	0.8	-	M174



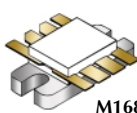
M111



M130



M164



M168



M122



M156



M173



M174

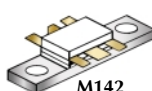
BIPOLAR CELLULAR BTS

860 to 960 MHz Class AB, Common Emitter / Cellular Base Station

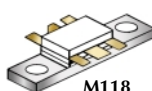
P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Eff. %	R _{th(j-c)} °C/W	Package
SD1398	960	6	10	24	50	3.3	M142
SD1423	960	15	8	24	45	6	M118
SD4600	960	60	7.5	26	50	1.2	M173
SD4590	900	150	8.5	26	35	0.6	M208



M173



M142



M118

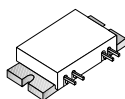


M208

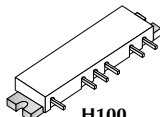
HYBRID POWER MODULES

P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Eff. %	Package
STM915-16	890 - 915	16	42	12,5	35	H100
STM901-30*	860 - 900	30	35	26	26	H141
STM961-15B	915 - 960	15	28	26	32	H110

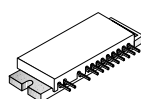
* PEP



H110



H100



H141

BIPOLAR - AVIONICS

1025 - 1150 MHz, Class C, Common Base - Pulsed / DME-IFF

P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Eff. %	Pulse Width μs	Duty Cycle %	Rth(j-c) °C/W	Package
MSC1000M*	1025 - 1150	0.6	10.8	18	Class A	10	1	35	SO58
MSC1000MP*	1025 - 1150	0.6	10.8	18	Class A	10	1	35	SO51
MSC1004M	1025 - 1150	4	9	28	35	10	1	5	SO68
MSC1004MP	1025 - 1150	4	9	28	35	10	1	5	SO53
SD1528-08	1025 - 1150	15	10	50	30	10	1	2	M105
MSC81035MP	1025 - 1150	35	10.7	50	43	10	1	1	M115
SD1530-01	1025 - 1150	35	9	50	30	10	1	2	M115
SD1530-08	1025 - 1150	35	8.5	50	30	10	1	2	M105
SD1534-01	1025 - 1150	75	7.6	50	-	10	1	0.8	M115
SD1534-08	1025 - 1150	75	7.5	50	-	10	1	0.8	M105
SD1538-02	1025 - 1150	150	7.8	50	-	10	1	0.3	M103
SD1538-08	1025 - 1150	150	7.8	50	-	10	1	0.3	M138
MSC81250M	1025 - 1150	250	6.2	50	40	10	1	0.2	SO42
MSC81325M	1025 - 1150	325	6.7	50	40	10	1	0.17	SO42
MSC81350M	1090	350	7	50	40	10	1	0.2	SO42
SD1540	1025 - 1150	300	6.3	50	35	10	1	0.2	M103
SD1540-08	1025 - 1150	300	6.3	50	35	10	1	0.2	M138
SD1541-01	1025 - 1150	400	6.5	50	-	10	1	0.12	M112
MSC81400M	1025 - 1150	400	6.5	50	40	10	1	0.12	SO38
MSC81450M	1090	450	7	50	40	10	1	0.15	SO38
SD1542	1025 - 1150	550	5.6	50	-	10	1	0.06	M112
SD1542-42	1090	600	6	50	35	10	1	0.06	M112

* Common emitter / tested CW

960 to 1215 MHz Class C, Common Base - Pulsed / JTIDS - MIDS - TACAN

P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Eff. %	Pulse Width μs	Duty Cycle %	Rth(j-c) °C/W	Package
AM80912-005	960 - 1215	6	9.3	28	45	*	*	7	SO64
AM80912-015	960 - 1215	15	8.1	28	45	*	*	3	SO64
AM80912-030	960 - 1215	30	7.8	35	40	*	*	2.2	SO36
AM80912-085	960 - 1215	85	7.5	35	40	*	*	0.75	SO42
AM0912-080	960 - 1215	90	8.4	50	38	10	10	0.8	SO42
AM0912-150	960 - 1215	150	7.5	35	45	*	*	0.57	SO38
SD8250	960 - 1215	250	8	50	38	20	5	0.28	SO36
AM0912-300	960 - 1215	300	7	50	38	10	10	0.16	SO38

* Devices are characterized and tested under JTIDS pulse burst conditions

1030 - 1090 MHz, Class C, Common Base - Pulsed / Mode-S, TCAS

P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Eff. %	Pulse Width μs	Duty Cycle %	Rth(j-c) °C/W	Package
AM1011-075	1090	75	9.2	50	48	32	2	0.86	SO36
AM1011-400	1090	400	8	50	45	32	2	0.17	SO38
AM1011-500	1090	500	8.5	50	40	32	2	0.11	M198

Pulse conditions equivalent to Mode-S ground interrogator burst



M112



SO38



M198



SO36

BIPOLAR - RADAR

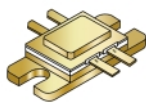
400 - 500 MHz Class C, Common Base - Pulsed / UHF Radar

P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Eff. %	Pulse Width μs	Duty Cycle %	Rth(j-c) °C/W	Package
SD1563	400-500	300	9.5	40	55	250	10	0.2	M106
SD1565	400-500	500	9.7	40	50	250	10	0.15	M102

1215 - 1400 MHz Class C, Common Base - Pulsed / L-Band Radar

P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Eff. %	Pulse Width μs	Duty Cycle %	Rth(j-c) °C/W	Package
AM81214-006	1215 - 1400	5.5	10	28	47	1000	10	9	SO64
AM81214-015	1215 - 1400	14.5	8.6	28	48	1000	10	4	SO64
AM81214-030	1215 - 1400	26	7.2	28	45	1000	10	2.4	SO64
AM1214-130*	1215 - 1400	130	8	50	40	100	10	0.45	M259
AM1214-250*	1215 - 1400	250	7	50	37	100	10	0.21	M259
AM1416-220	1450 - 1600	200	7	50	35	10	10	0.15	M239

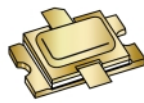
* In development



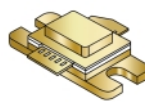
M102



M106



M239



M259

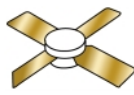
BIPOLAR - GENERAL PURPOSE

1000 - 3000 MHz Class C, Common Base - CW / General Purpose

P/N	Freq. MHz	Pout W	Gain dB	V _{CC} V	Eff. %	Rth(j-c) °C/W	Package
MSC81118	1000	2	10	28	50	20	SO10
MSC81111	1000	5	10	28	50	8	SO10
MSC81058	1000	10	10	28	60	6	SO10
MSC82001	2000	1	7	28	35	20	SO10
MSC82003	2000	3	7.8	28	35	8	SO10
MSC82005	2000	5	7	28	35	6	SO10
MSC83301	3000	1	7	28	33	25	SO10



SO58/68



M115/SO51/SO53



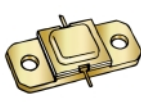
M105



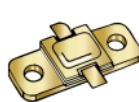
M103



SO10



SO42



SO64



M138

RF SIGNAL

Wireless ICs

Silicon MMIC LNA

P/N	Description	Features	V _{CC} V	I _C mA	NF@1.8GHz dB	Gain@1.8GHz dB	P1dB@1.8GHz dBm	Package
SMA427A	Silicon MMIC amplifier	50Ω matched	3	9.6	2	18.2	-3	SOT323-4L
SMA428A	High gain LNA for GSM	Low Current Open Collector	2.75	5.9	1.3	21	2.5	SOT323-6L
SMA540B*	Active Bias Transistor	Mirror Biased	2	20	1.25	17	12	SOT323-4L

* In development

Silicon Low Noise Amplifier, Cellular Handhelds

P/N	Description	Features	V _{CC} V	I _C mA	NF@Max dB	Max Gain dB	Package
STB7001	LNA for GSM	3 Gain Levels	2.8	15	2.5	26	MSOP8
STB7002	LNA for DCS	3 Gain Levels	2.8	15	2.6	26	MSOP8-EP
STB7003	LNA for GSM/ DCS/PCS	2 Gain Levels Tri Band	2.8	7.3	2*	15*	MSOP10-EP

* 1.95GHz

Silicon MMIC Buffer Amplifiers

P/N	Description	Features	V _{CC} V	I _C mA	P1dB dBm	Gain@P1dB dB	Isolation	Package
STB7102	0.1-2.5GHz Buffer Amplifier	High Isolation	3	4.3	0	15.5	45	SOT323-6L
STB7103	0.1-2.5GHz Buffer Amplifier	High Linearity	3	3.7	1.5	18	45	SOT323-6L
STB7104	0.1-2.5GHz Buffer Amplifier	Low Current	3	2.6	-1	17	45	SOT323-6L

* 0.95 GHz

Silicon PA Drivers, Cellular Handhelds

P/N	Description	Features	V _{CC} V	I _C mA	P1dB dBm	Gain dB	Package
STB7101	0.9/1.9 GHz Driver	Broad Band	2.75	28	9.8* 7.5•	20.3* 20.5•	SOT323-6L

* 0.9 GHz • 1.9 GHz

SiGe PA Power Amplifier

P/N	Description	Features	Freq. MHz	V _{CC} V	I _C mA	Pout dBm	Package
STB7710F*	Power Amplifier for 2.5GHz applications	2 Bit Gain Digital Control	2450	3.2	140	22.5	Flip-Chip (1.5x1.6)

* In development

RF SIGNAL

RF Transistors

0.4 - 5 GHz Silicon LNA, General Purpose

P/N	Description	Features	V _{CC} V	I _C mA	NFmin@1.8GHz dB	Max Stable Gain dB	Package
START405	NPN Si RF Transistor	Low Noise Figure	2	5	1.15 @ 2mA	24.2 @ 1.8GHz	SOT323-4L
START420	NPN Si RF Transistor	Low Noise Figure	2	20	1.05 @ 5mA	22.5 @ 1.8GHz	SOT323-4L
START450	NPN Si RF Transistor	Low Noise Figure	2	50	1.12 @ 10mA	19 @ 1.8GHz	SOT323-4L
START540	NPN Si RF Transistor	Low Noise Figure	2	20	0.9 @ 5mA	22.5 @ 1.8GHz	SOT323-4L

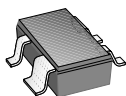
0.4 - 5 GHz Silicon Power Amplifiers, General Purpose

P/N	Description	Features	V _{CC} V	I _{CO} mA	P1dB dBm	Gain dB	Package
START499	NPN Si RF Transistor	High Power Amplifier	3.6	5	26 @ 60%PAE	11	SOT323-4L

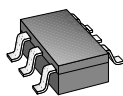
GPS

RF Receivers

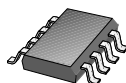
P/N	Description	Features	V _{CC} V	Freq. MHz	Package
STB5600	Down Converter for GPS	Low External Components	3.3	1575	TQFP32
STB5610	Down Converter for GPS	PLL Inside	2.7	1575	TQFP48



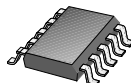
SOT323-4L



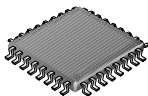
SOT323-6L



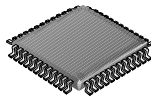
MSOP8



MSOP10



TQFP32



TQFP48



Flip-Chip

RF PACKAGE RANGE

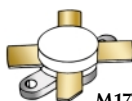
Epoxy Sealed



M122



M174



M177

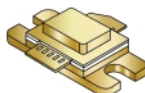


M244

Hermetic



SO10



M259

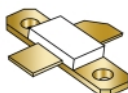


M112

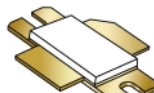
LDMOS - BeO Free



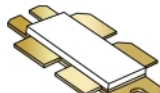
M250



M243



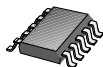
M265



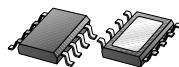
M252



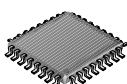
MSOP8



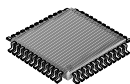
MSOP10



MSOP8
Exposed Pad



TQFP32



TQFP48



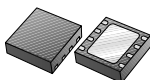
SOT323-6L



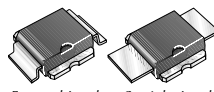
SOT323-4L



Flip-Chip



PowerFLAT (5x5)



Formed Leads Straight Leads
PowerSO-10RF



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