GaN HEMTs for Base Station

Features

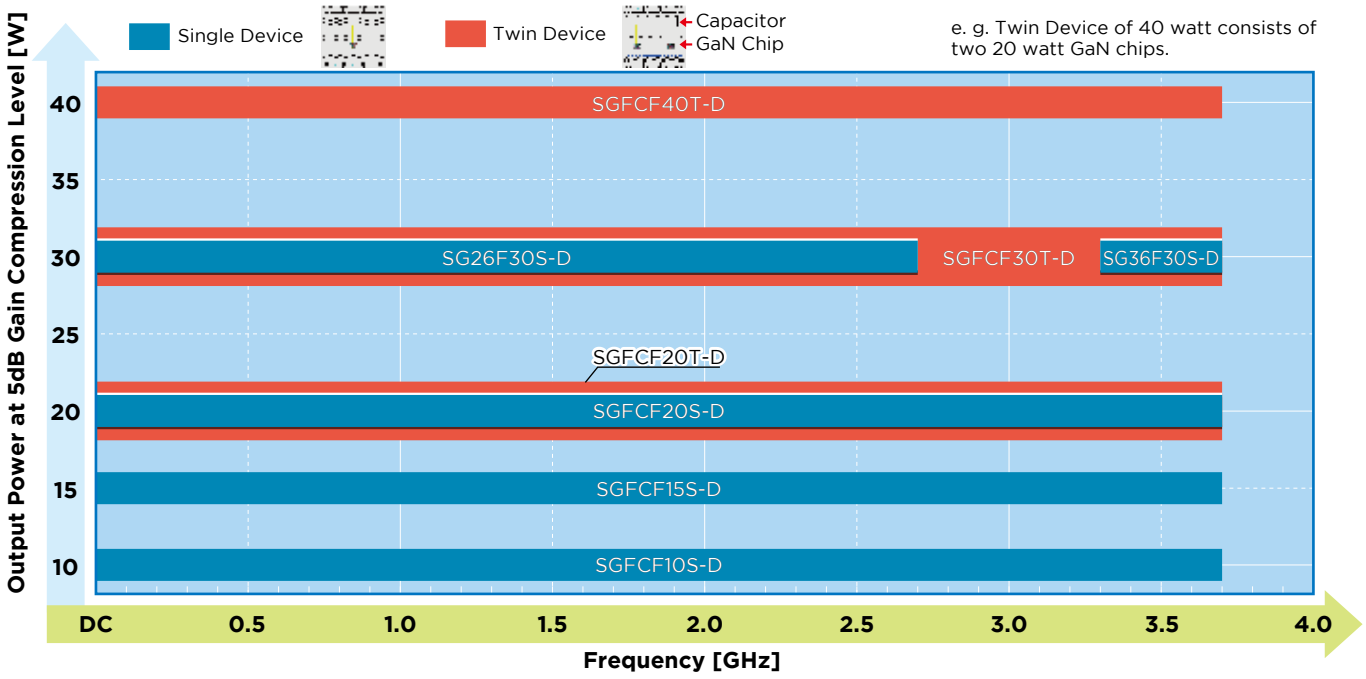
- Designed for 3G/LTE/WiMAX Base Station
- Driver Stage for Macrocell & Final Stage for Microcell
- High Operationg Voltage : 50V
- High Gain : Gp=19dB @f=2.65GHz, 20W (SGFCF20S-D)
- High Efficiency : 65% @f=2.65GHz, 20W (SGFCF20S-D)
- Full Mold SMT Package (Z2D)

Naming Rules

SG 26 F 30 S - D

- SG : GaN-HEMT
- 26 : Frequency (FC : DC to 3.7GHz)
- F : Series Number
- 30 : Output Power (W)
- S : S : Single GaN, T : Twin GaN
- D : Package Code

"F Series" Lineup



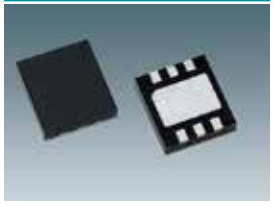
Specifications (Driver and Final Stage)

Part Number	Single / Twin	Freq. (GHz)	Specified Freq. (GHz)	Psat*1 (dBm)	Pout*2 (dBm)	Gp*2 (dB)	ηd*2 (%)	VDS (V)	IDS(DC) (mA)	Rth*3 (°C/W)	Package
SG26F30S-D	Single	DC-2.7	2.65	46	32.5	18.5	13.5	50	150	5.5	Z2D
SGFCF10S-D	Single	DC-3.7	2.65	41	27.5	19.5	13.5	50	50	10	
SGFCF15S-D	Single	DC-3.7	2.65	42.5	29	19.5	13.5	50	75	9	
SGFCF20S-D	Single	DC-3.7	2.65	44	30.5	19	13.5	50	100	7	
SGFCF20T-D *4	Twin	DC-3.7	2.65	41	27.5	19.5	13.5	50	50	10	
SGFCF30T-D *4	Twin	DC-3.7	2.65	42.5	29	19.5	13.5	50	75	9	
SGFCF40T-D *4	Twin	DC-3.7	2.65	44	30.5	19	13.5	50	100	7	
SG36F30S-D	Single	3.3-3.7	3.6	45.5	32	17	12.5	50	150	5.5	

*1:10%-duty RF pulse(DC supply constant)
*2:Pout=(Ave.) , W-CDMA(3GPP3.4 12-00)BS-1 64ch 85% clipping modulation(PAR=8.5dB@0.01%)
*3:Sampling Test : samples size 10pcs. Criteria(accept / reject)=(0 / 1)
*4:Specification of one path
Note: Tc (op)=+25°C

Product Photo

Z2D Package



GaN HEMTs for Base Station

Features

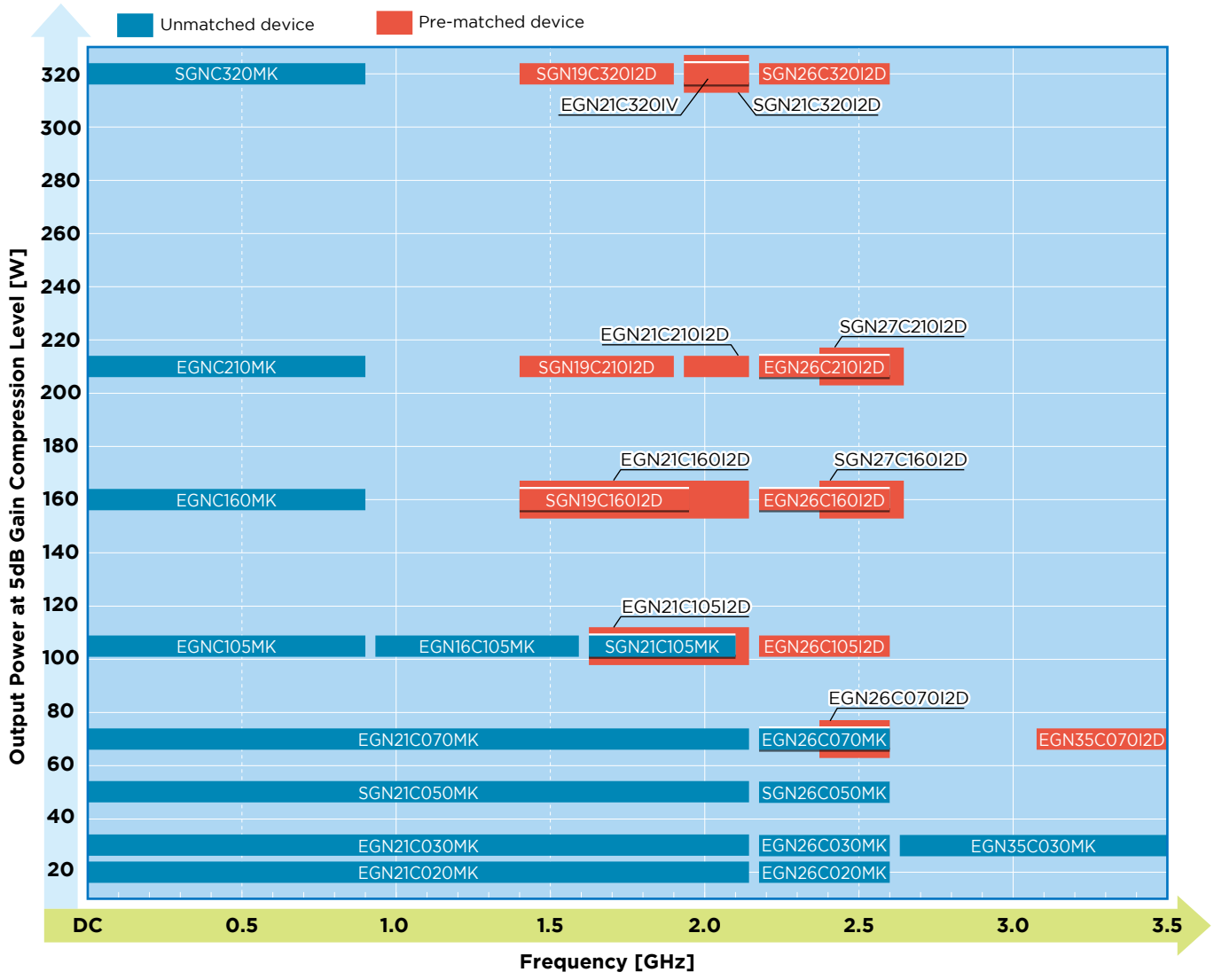
- Designed for 3G/LTE/WiMAX Base Station
- Optimized for Doherty Architecture
- Higher Load Impedance: 15 to 20Ω @Final Stage (Easy Match, Wide Band)
- High Operating Voltage: 50V
- High Power: Up to 320W Psat Single Ended
- High Gain: Gp=16dB @f=2.6GHz, 210W Device
- High Efficiency: 60-70% with Internal Class F Matching

Naming Rules

SGN 27 C 210 I2D

- I2D: Package Code
- 210: Output Power (W)
- C: Series Name
- 27: Frequency
- SGN: GaN-HEMT

"C Series" Lineup



Specifications (Driver Stage)

Part Number	Freq. (GHz)	Psat*1 (dBm)	Pout*2 (dBm)	Gp*2 (dB)	ηd*2 (%)	VDS (V)	IDS (DC) (mA)	Rth (°C/W)	Package
EGN21C020MK	2.14	43.5	30	19	12.5	50	100	6.0	MK
EGN21C030MK	2.14	45.0	31.5	19	12.5	50	150	5.0	
EGN26C020MK	2.6	43.5	30	18	12.5	50	100	6.0	
EGN26C030MK	2.6	45.0	31.5	18	12.5	50	150	5.0	
EGN35C030MK	3.5	45.0	31.5	16.5	11	50	150	5.0	

*1: 10%-duty RF pulse(DC supply constant)
*2: Pout=(Ave.), CW
Note: Tc (op)=+25°C

Specifications (Final Stage)

Part Number	Freq. (GHz)	Psat*1 (dBm)	Pout (dBm)	Gp (dB)	η d (%)	VDS (V)	IDS (DC) (mA)	Rth (°C/W)	Package
EGNC105MK	0.9	51.0	43.0*3	20.0*3	35*3	50	400	2.0	MK
EGNC160MK	0.9	52.5	44.5*3	18.0*3	35*3	50	600	1.4	
EGNC210MK	0.9	53.5	45.5*3	17.5*3	35*3	50	750	1.1	
EGN16C105MK	1.6	50.5	42.5*3	19.0*3	33*3	50	400	2.0	
SGN19C210I2D	1.9	53.0	45.0*3	18.5*3	32*3	50	750	1.1	I2D
SGN19C160I2D	1.96	52.3	44.5*3	18.0*3	35*3	50	600	1.4	
SGN21C105MK	2.1	50.3	42.5*3	17.0*3	32*3	50	400	2.0	MK
EGN21C070MK	2.14	49.5	41.5*3	17.0*3	33*3	50	300	2.5	
EGN21C105I2D	2.14	50.3	42.0*2	18.0*2	32*2	50	400	2.0	I2D
EGN21C160I2D	2.14	52.5	44.5*2	18.0*2	32*2	50	600	1.4	
EGN21C210I2D	2.14	53.0	45.0*2	18.0*2	32*2	50	750	1.1	
EGN21C320IV	2.14	55.0	47.0*2	18.0*2	31*2	50	1100	0.8	IV
SGN21C050MK	2.14	47.0	39.0*3	18.5*3	33*3	50	200	3.0	MK
EGN26C070I2D	2.6	48.8	40.8*3	18.0*3	35*3	50	300	2.5	I2D
EGN26C070MK	2.6	48.8	40.8*3	16.5*3	30*3	50	300	2.5	MK
EGN26C105I2D	2.6	50.3	42.0*3	17.0*3	32*3	50	400	2.0	I2D
EGN26C160I2D	2.6	52.5	44.5*3	16.0*3	30*3	50	600	1.4	
EGN26C210I2D	2.6	53.0	45.0*3	16.0*3	30*3	50	750	1.1	
SGN26C050MK	2.6	47.0	39.0*3	17.5*3	33*3	50	200	3.0	MK
SGN27C160I2D	2.65	52.5	44.5*3	16.3*3	30*3	50	600	1.4	I2D
SGN27C210I2D	2.65	53.0	45.0*3	16.3*3	30*3	50	750	1.1	
EGN35C070I2D	3.5	48.8	40.8*3	15.5*3	28*3	50	300	2.5	

*1: 10%-duty RF pulse(DC supply constant)
*2: Pout=(Ave.), f0=2.135GHz, f1=2.145GHz, W-CDMA (3GPP3.4 12-00) BS-1 64ch 47.5% clipping modulation (PAR=8.5dB@0.01%)
*3: Pout=(Ave.), W-CDMA (3GPP3.4 12-00) BS-1 64ch 65% clipping modulation (PAR=8.5dB@0.01%)
Note: Tc (op)=+25°C

Specifications (Peak Stage of Doherty Amplifier)

Part Number	Freq. (GHz)	Psat*1 (dBm)	Gp*2 (dB)	VDS (V)	Rth (°C/W)	Package
SGNC320MK	0.9	55.0	16.5	50	1.2	MK
SGN19C320I2D	1.9	55.0	18	50	1.2	I2D
SGN21C320I2D	2.14	55.0	17.5	50	1.2	
SGN26C320I2D	2.6	55.0	16	50	1.2	

*1: 10%-duty RF pulse (DC supply constant : IDS(DC)=10mA)
*2: Pout=3dB back off point, 10%-duty RF pulse (DC supply constant : IDS(DC)=10mA)
Note: Tc (op)=+25°C

Product Photo

MK Package	I2D Package	IV Package