



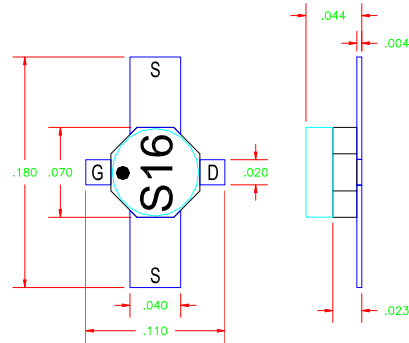
# EPA018BV-70SC

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## High Efficiency Heterojunction Power FET

### FEATURES

- None-Hermetic Low Cost Ceramic 70mil Package
- +20.0 dBm Output Power at 1dB Compression
- 11.0 dB Power Gain at 18GHz
- Typical 0.75 dB Noise Figure and 12.5 dB Associated Gain at 12GHz
- 0.3 x 180 Micron Recessed "Mushroom" Gate
- Si<sub>3</sub>N<sub>4</sub> Passivation
- Advanced Epitaxial Heterojunction Profile Provides Extra High Power Efficiency, and High Reliability



### ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25°C)



Caution! ESD sensitive device.

SYMBOL	PARAMETERS/TEST CONDITIONS <sup>1</sup>	MIN	TYP	MAX	UNITS
P <sub>1dB</sub>	Output Power at 1dB Compression f = 12GHz V <sub>DS</sub> = 6V, I <sub>DS</sub> ≈ 50% I <sub>DSS</sub> f = 18GHz	18.5	20.0 20.0		dBm
G <sub>1dB</sub>	Gain at 1dB Compression f = 12GHz V <sub>DS</sub> = 6V, I <sub>DS</sub> ≈ 50% I <sub>DSS</sub> f = 18GHz	12.0	14 12		dB
PAE	Power Added Efficiency at 1dB Compression V <sub>DS</sub> = 6V, I <sub>DS</sub> ≈ 50% I <sub>DSS</sub> f = 12GHz		45		%
NF	Noise Figure V <sub>DS</sub> = 2V, I <sub>DS</sub> = 15mA f = 12GHz		0.75		dB
GA	Associate Gain V <sub>DS</sub> = 2V, I <sub>DS</sub> = 15mA f = 12GHz		12.5		dB
I <sub>DSS</sub>	Saturated Drain Current V <sub>DS</sub> = 3 V, V <sub>GS</sub> = 0 V	40	55	90	mA
G <sub>M</sub>	Transconductance V <sub>DS</sub> = 3 V, V <sub>GS</sub> = 0 V	35	60		mS
V <sub>P</sub>	Pinch-off Voltage V <sub>DS</sub> = 3 V, I <sub>DS</sub> = 1.0 mA		-1.0	-2.5	V
BV <sub>GD</sub>	Drain Breakdown Voltage I <sub>GD</sub> = 1.0mA	-9	-15		V
BV <sub>GS</sub>	Source Breakdown Voltage I <sub>GS</sub> = 1.0mA	-6	-14		V
R <sub>TH</sub>	Thermal Resistance		480*		°C/W
S <sub>21</sub>	Insertion Gain in dB V <sub>DS</sub> = 6V, I <sub>DS</sub> ≈ 50% I <sub>DSS</sub> f = 24GHz	2.5			dB

Notes: \* Overall R<sub>th</sub> depends on case mounting.

### ABSOLUTE MAXIMUM RATINGS FOR CONTINUOUS OPERATION<sup>1,2</sup>

SYMBOL	CHARACTERISTIC	VALUE
V <sub>DS</sub>	Drain to Source Voltage	6 V
V <sub>GS</sub>	Gate to Source Voltage	-3 V
I <sub>DS</sub>	Drain Current	40 mA
I <sub>GSF</sub>	Forward Gate Current	1.5 mA
P <sub>IN</sub>	Input Power	@ 3dB compression
P <sub>T</sub>	Total Power Dissipation	240 mW
T <sub>CH</sub>	Channel Temperature	150°C
T <sub>STG</sub>	Storage Temperature	-65/+150°C

1. Exceeding any of the above ratings may result in permanent damage.
2. Exceeding any of the above ratings may reduce MTTF below design goals.

Specifications are subject to change without notice.

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