

2SK3174A

Silicon N Channel MOS FET
UHF Power Amplifier

HITACHI

ADE-208-1451 (Z)

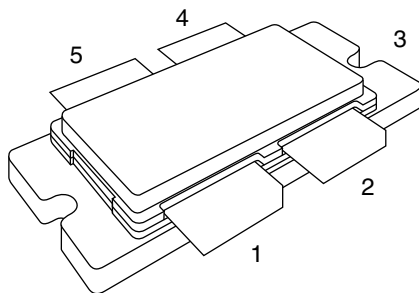
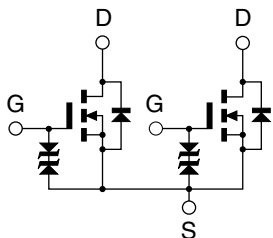
1st. Edition
September 2001

Features

- High power output, High gain, High efficiency
 $P_{1dB} = 220\text{ W}$, $PG = 15.3\text{ dB}$, $\eta_D = 61\%$ (at P_{1dB}) typ. ($f = 860\text{ MHz}$)
- Compact package
Suitable for push - pull circuit

Outline

RFPAK-F



1. Drain
2. Drain
3. Source
4. Gate
5. Gate

This Device is sensitive to Electro Static Discharge. An Adequate handling procedure is requested.
In AC testing, the part should be mounted on heat sink with thermal compound.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DS} ^{Note1}	60	V
Gate to source voltage	V_{GS}	±10	V
Drain current	I_D	16	A
Drain peak current	$I_{D(pulse)}$ ^{Note2}	32	A
Channel dissipation	P_{ch} ^{Note3}	252	W
Channel temperature	T_{ch}	175	°C
Storage temperature	T_{stg}	-55 to +150	°C

Note: 1. Pin=0, PW ≤ 0.1sec
2. PW ≤ 10ms, duty cycle ≤ 50 %
3. Value at Tc = 25°C

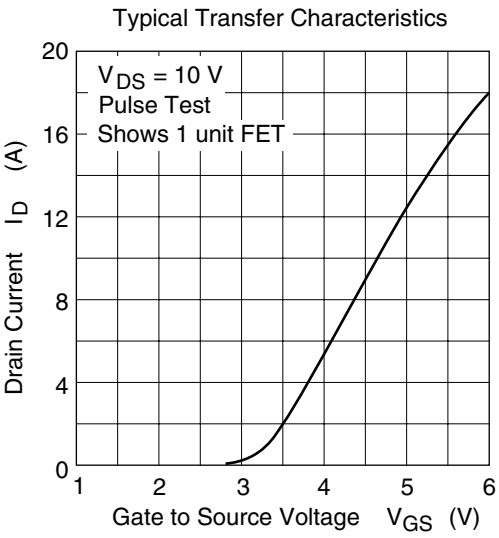
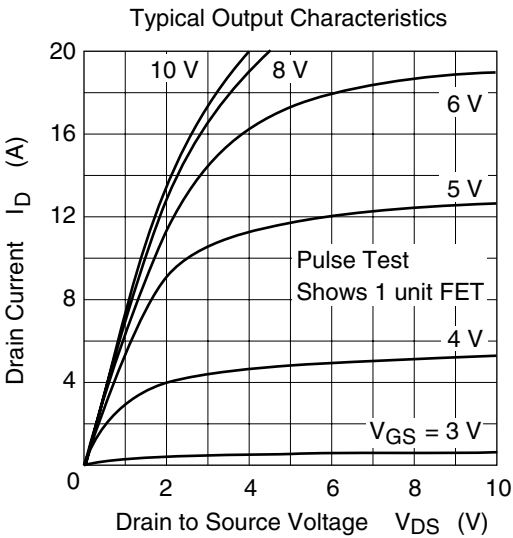
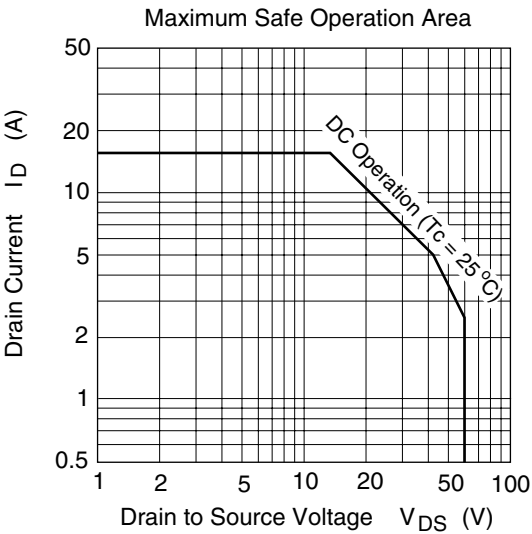
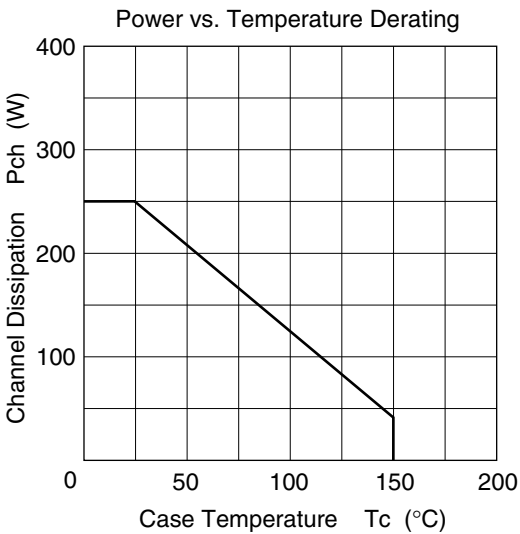
Electrical Characteristics

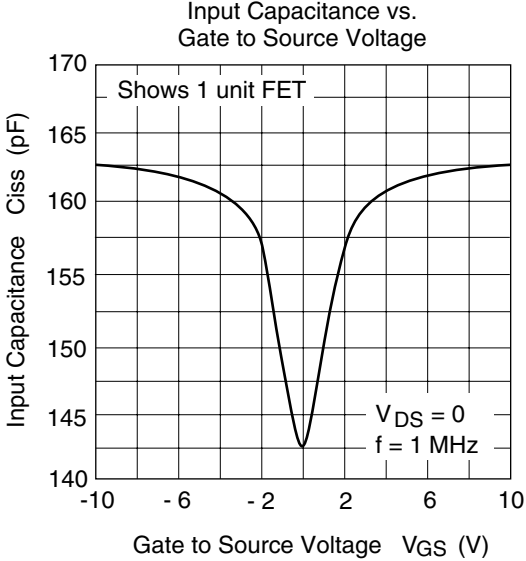
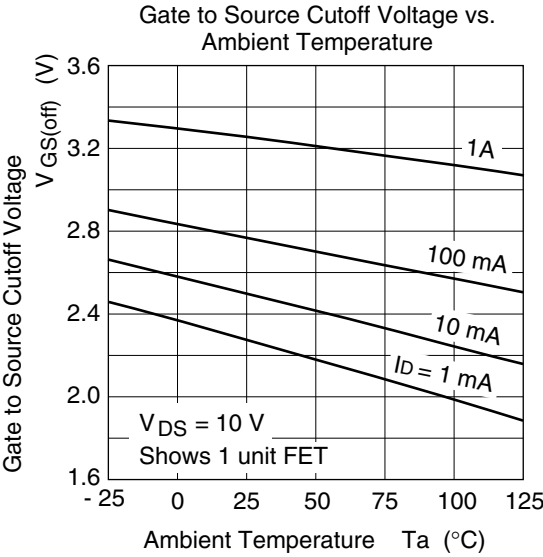
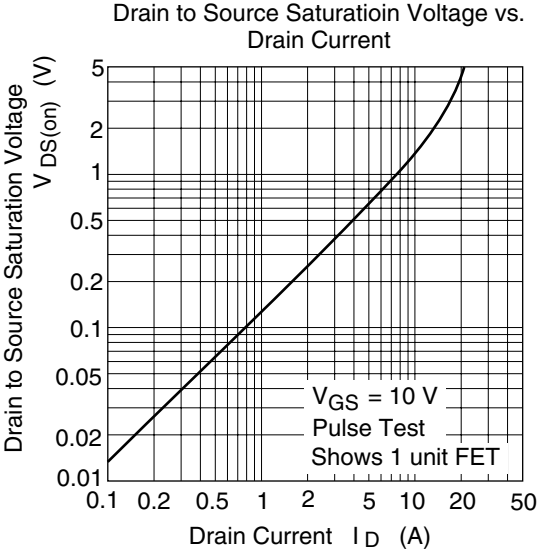
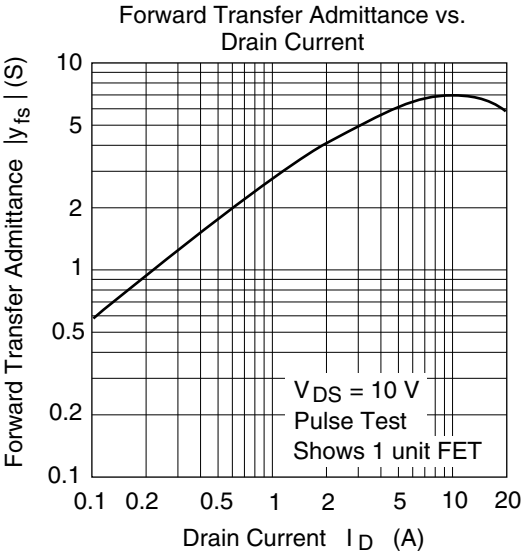
(Tc = 25°C)

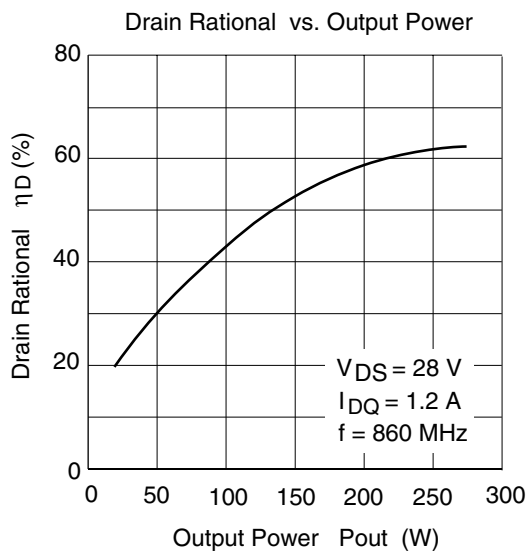
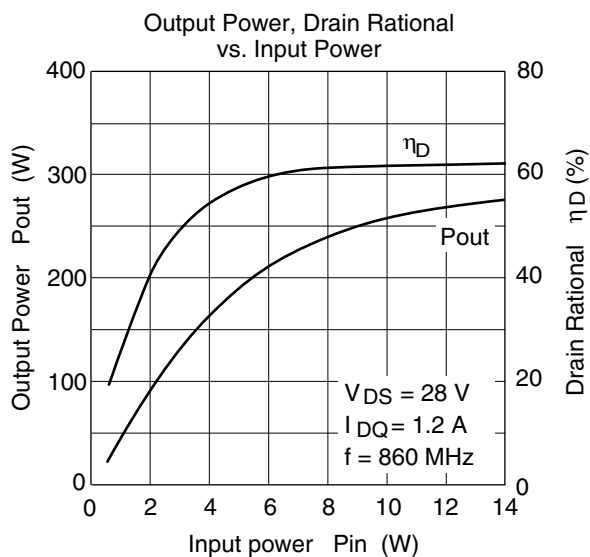
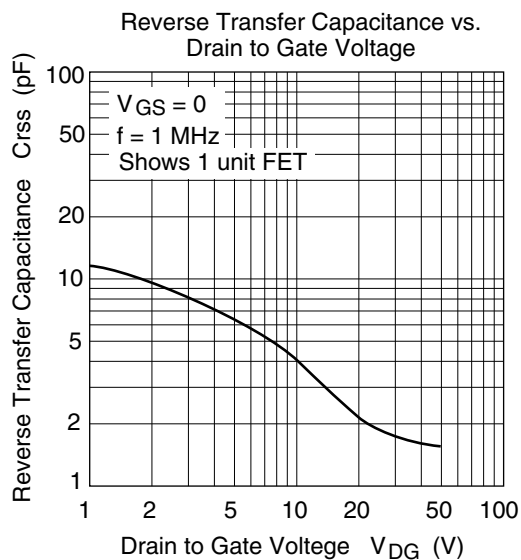
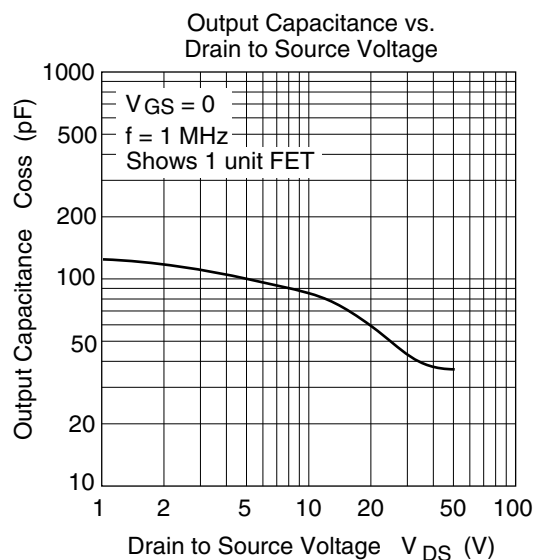
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage drain current ^{†Note4}	I_{DSS}	—	—	1	mA	$V_{DS} = 60\text{ V}, V_{GS} = 0$
Gate to source leak current ^{Note4}	I_{GSS}	—	—	±3	μA	$V_{GS} = \pm 10\text{ V}, V_{DS} = 0$
Gate to source cutoff voltage ^{Note4}	$V_{GS(off)}$	1.0	2.3	3.0	V	$I_D = 1\text{ mA}, V_{DS} = 10\text{ V}$
Forward transfer admittance ^{Note4 5}	$ y_{fs} $	4.0	6.7	—	S	$V_{DS}=10\text{ V}, I_D = 5\text{ A}$ ^{Note5}
Input capacitance ^{Note4}	C_{iss}	—	162	—	pF	$V_{GS} = 5\text{ V}, V_{DS} = 0$ $f = 1\text{ MHz}$
Reverse transfer capacitance ^{Note4}	C_{rss}	—	4	—	pF	$V_{DG} = 10\text{ V}, V_{GS} = 0$ $f = 1\text{ MHz}$
Output Power	P_{out}	200	270	—	W	$V_{DS} = 28\text{ V}, I_{DQ} = 1.2\text{ A}$ $f = 860\text{ MHz}$ Pin = 14 W
Drain Rational	η_D	—	64	—	%	$V_{DS} = 28\text{ V}, I_{DQ} = 1.2\text{ A}$ $f = 860\text{ MHz}$ Pin = 14 W

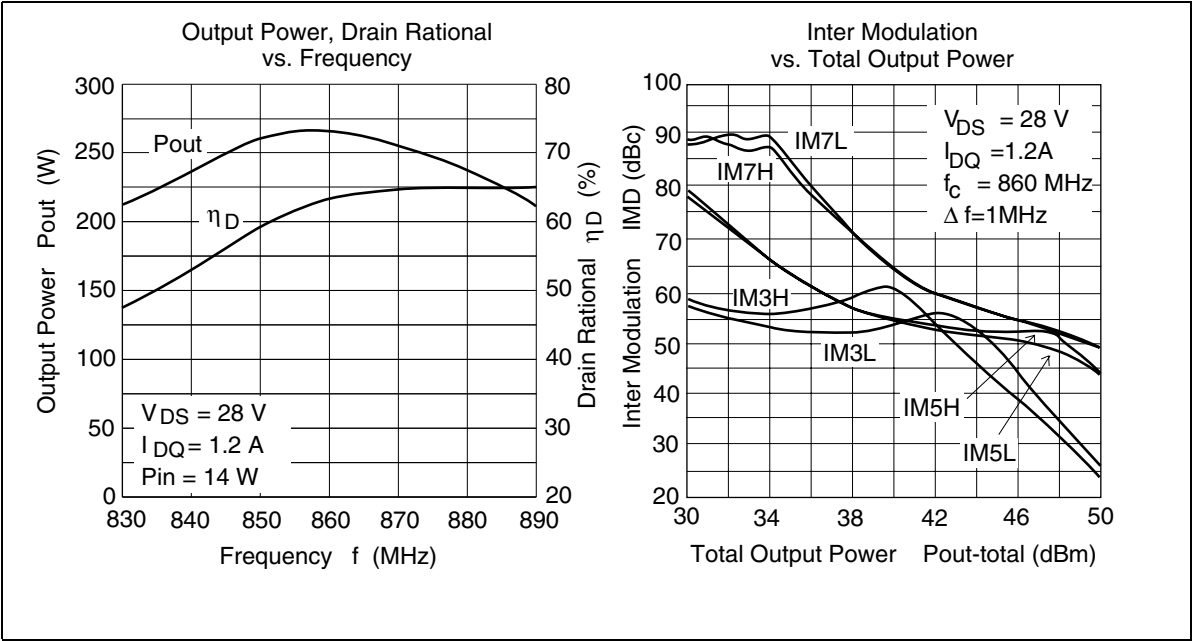
Note: 4. Shows 1 unit FET
5. Pulse Test

Main Characteristics

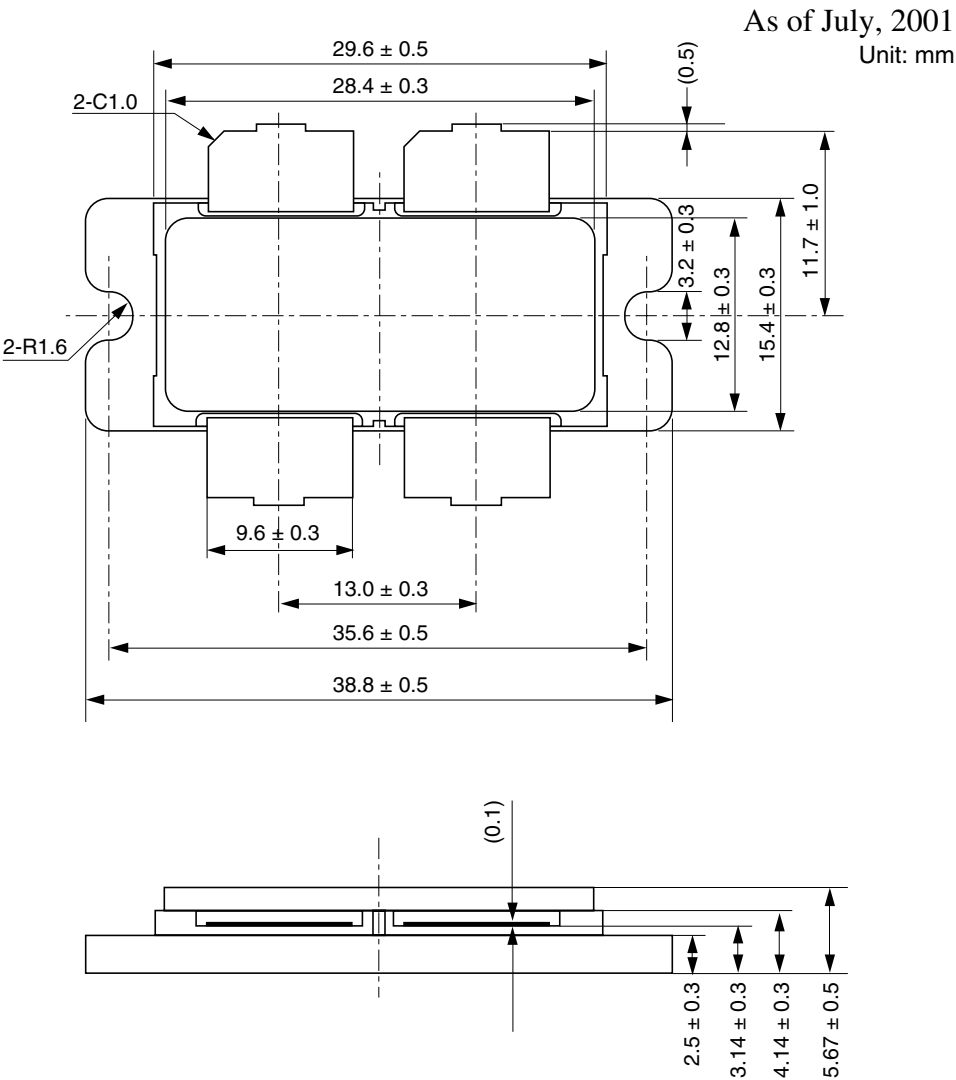








Package Dimensions



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