

2SK3175A

Silicon N Channel MOS FET
UHF Power Amplifier

HITACHI

ADE-208-1452 (Z)

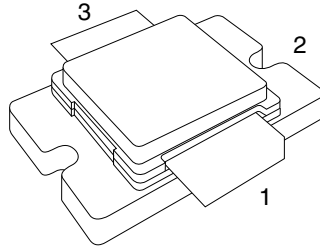
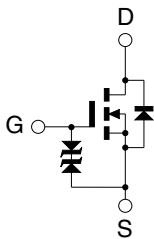
1st. Edition
September 2001

Features

- High power output, High gain, High efficiency
 $P_{1dB} = 110 \text{ W}$, $PG = 16.0 \text{ dB}$, $\eta_D = 60 \%$ (at P_{1dB}) typ. ($f = 860\text{MHz}$)
- Compact package

Outline

RFPAK-G



1. Drain
2. Source
3. 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

($T_a = 25^\circ\text{C}$)

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	8	A
Drain peak current	$I_{D(\text{pulse})}$ ^{Note2}	16	A
Channel dissipation	Pch ^{Note3}	126	W
Channel temperature	Tch	175	$^\circ\text{C}$
Storage temperature	Tstg	-55 to +150	$^\circ\text{C}$

Note: 1. Pin = 0, PW \leq 0.1 sec
2. PW \leq 10 ms, duty cycle \leq 50 %
3. Value at Tc = 25 $^\circ\text{C}$

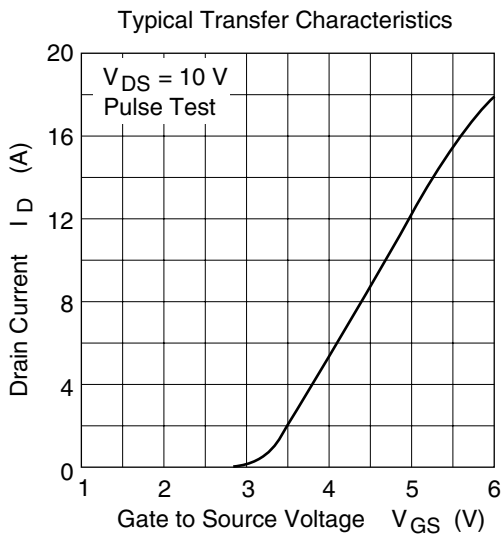
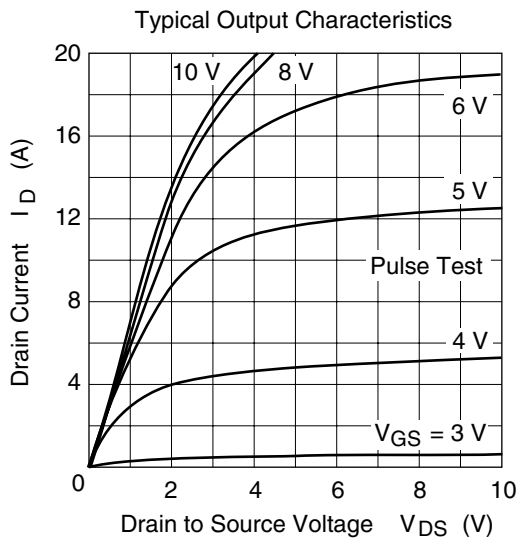
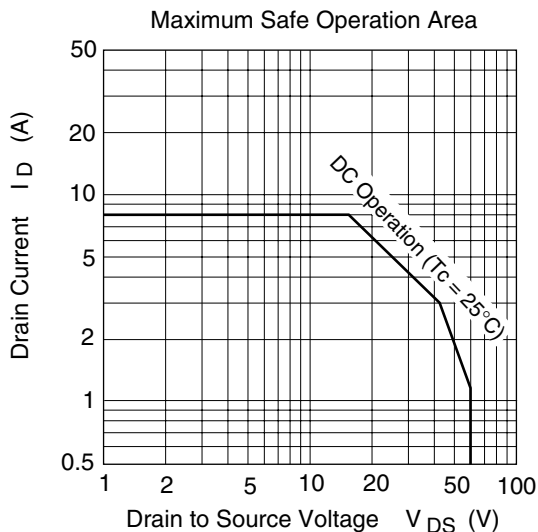
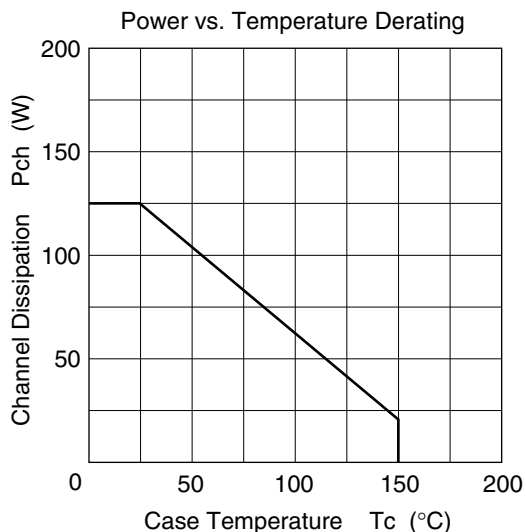
Electrical Characteristics

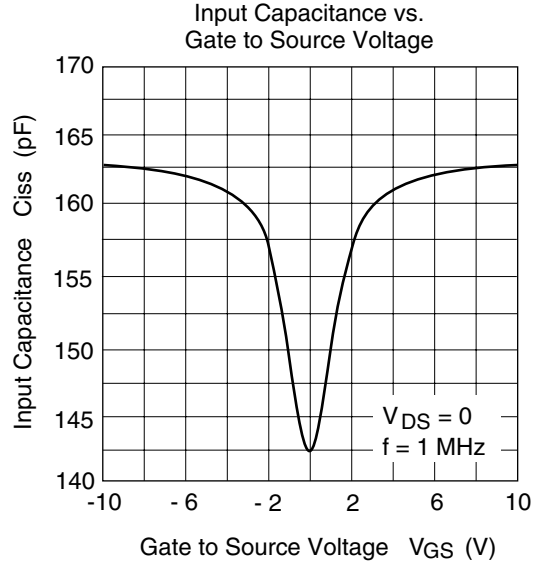
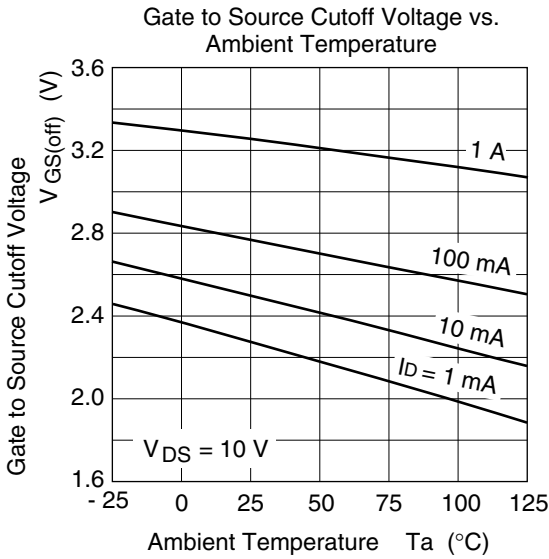
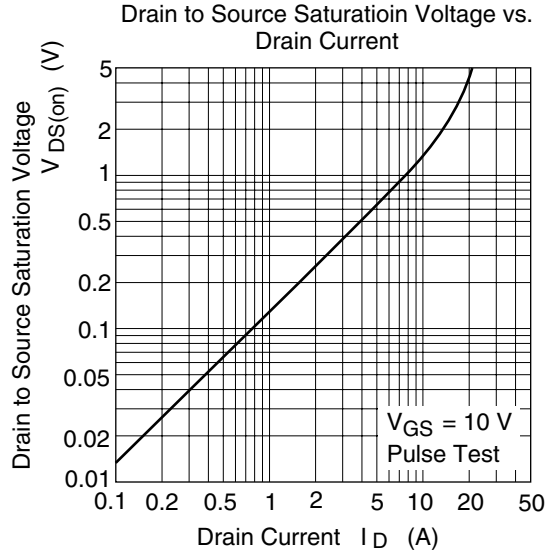
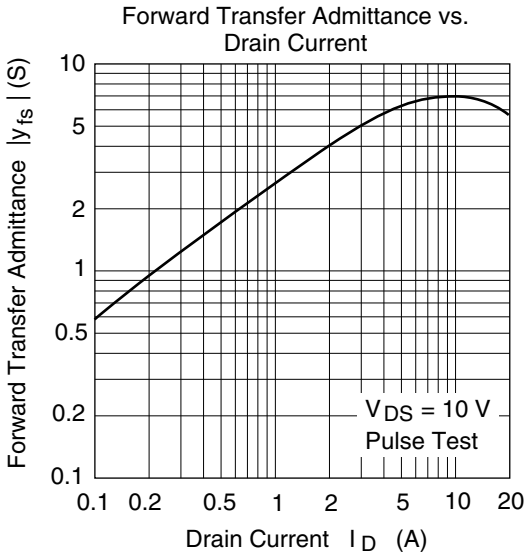
($T_c = 25^\circ\text{C}$)

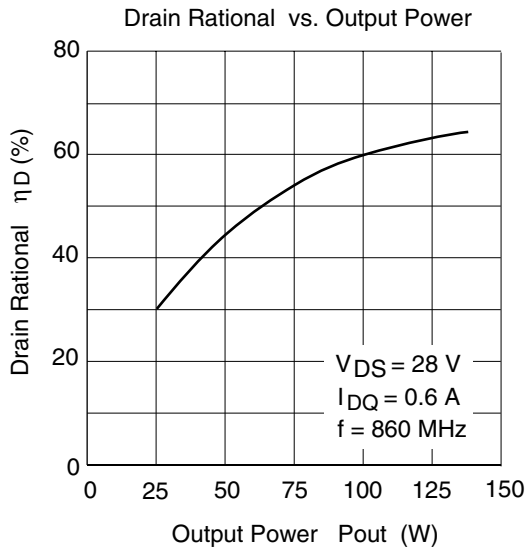
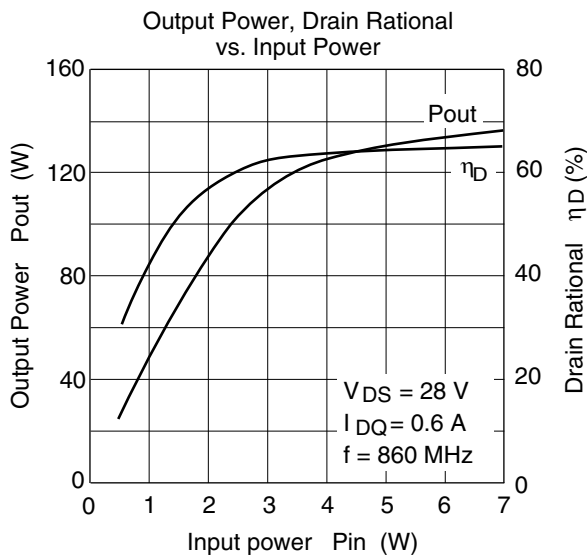
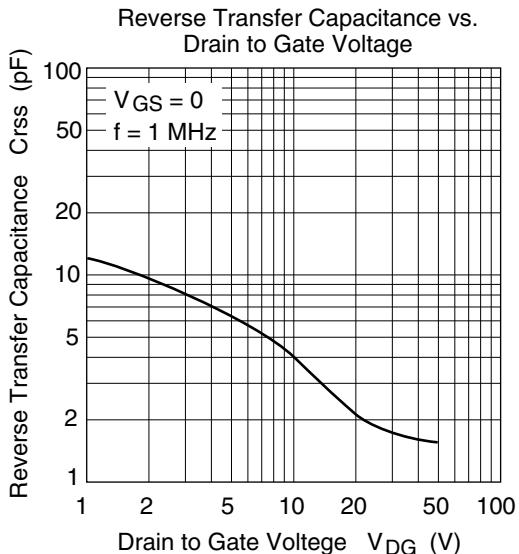
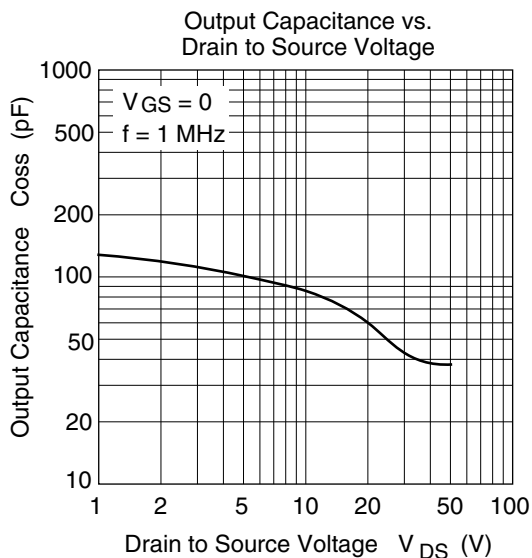
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage drain current	I_{DSS}	—	—	1	mA	$V_{DS} = 60\text{V}, V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 3	μA	$V_{GS} = \pm 10\text{V}, V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(\text{off})}$	1.0	2.2	3.0	V	$I_D = 1\text{mA}, V_{DS} = 10\text{V}$
Forward transfer admittance	$ y_{fs} $	4.0	6.7	—	S	$V_{DS} = 10\text{V}, I_D = 5\text{A}$ ^{Note4}
Input capacitance	Ciss	—	165	—	pF	$V_{GS} = 5\text{V}, V_{DS} = 0$ $f = 1\text{MHz}$
Reverse transfer capacitance	Crss	—	4	—	pF	$V_{DG} = 10\text{V}, V_{GS} = 0$ $f = 1\text{MHz}$
Output Power	Pout	100	135	—	W	$V_{DS} = 28\text{V}, I_{D0} = 0.6\text{A}$ $f = 860\text{MHz}$ Pin = 7 W
Drain Rational	η_D	—	65	—	%	$V_{DS} = 28\text{V}, I_{D0} = 0.6\text{A}$ $f = 860\text{MHz}$ Pin = 7 W

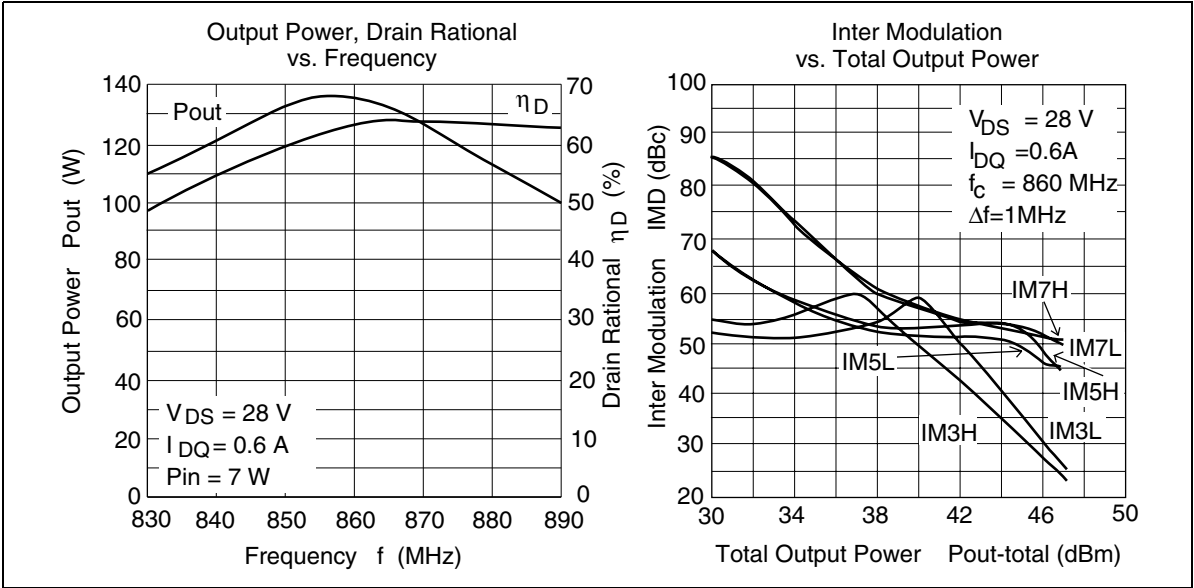
Note: 4. Pulse Test

Main Characteristics





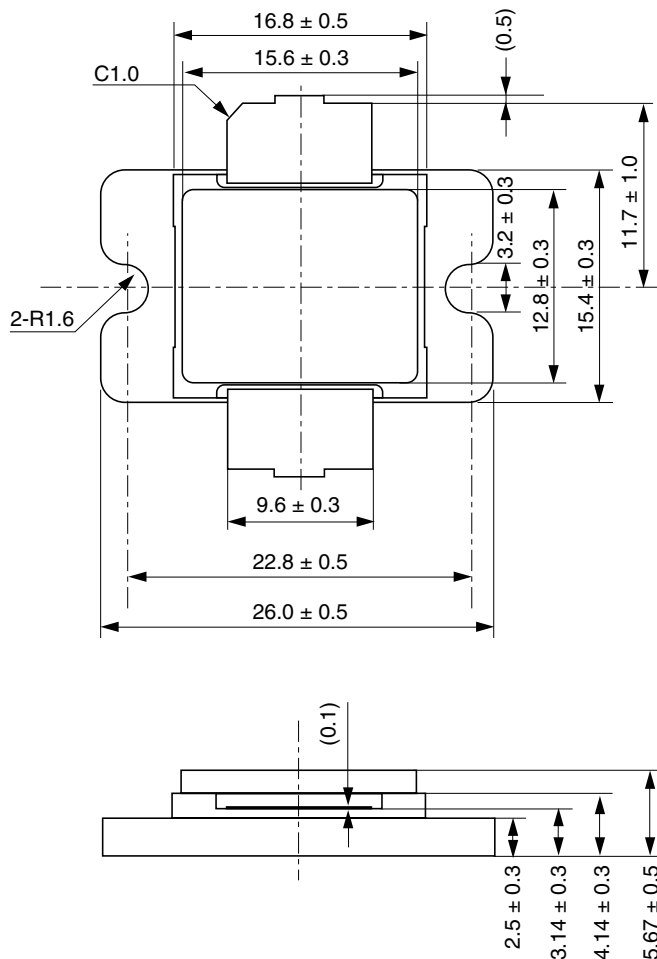




Package Dimensions

As of July, 2001

Unit: mm



Hitachi Code	RFPAK-G
JEDEC	-
JEITA	-
Mass (reference value)	11.0 g

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