

3SK186

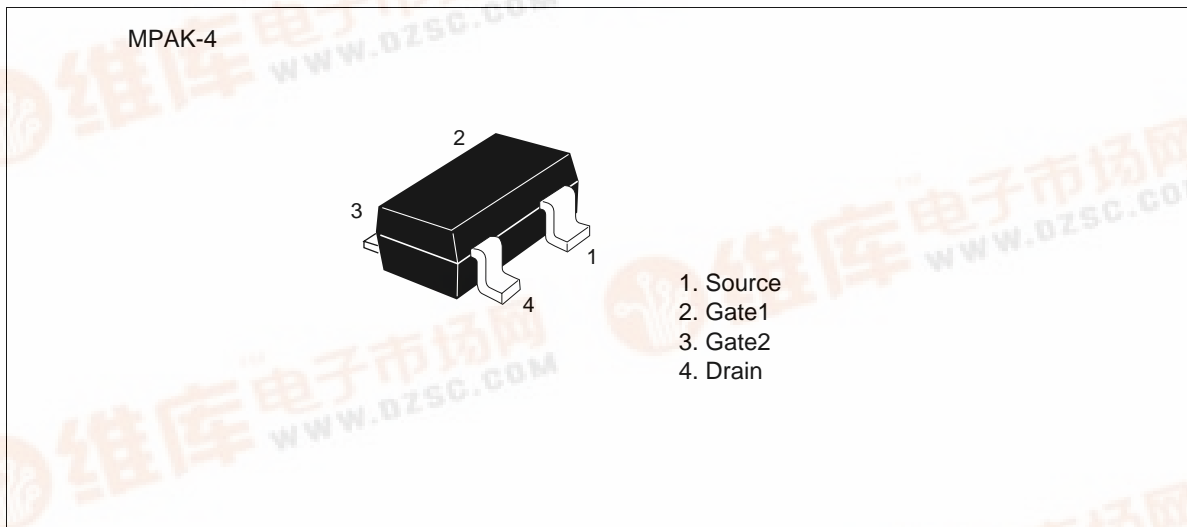
Silicon N-Channel Dual Gate MOS FET

HITACHI

Application

UHF TV tuner RF amplifier

Outline



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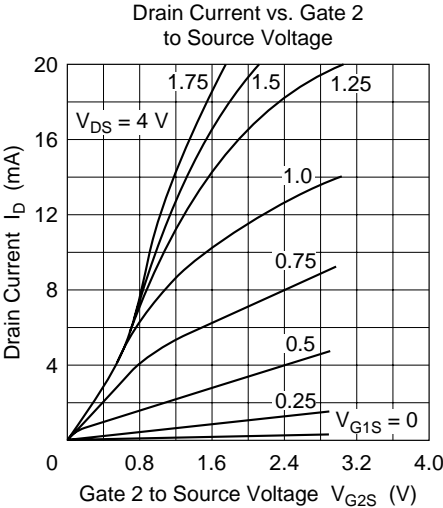
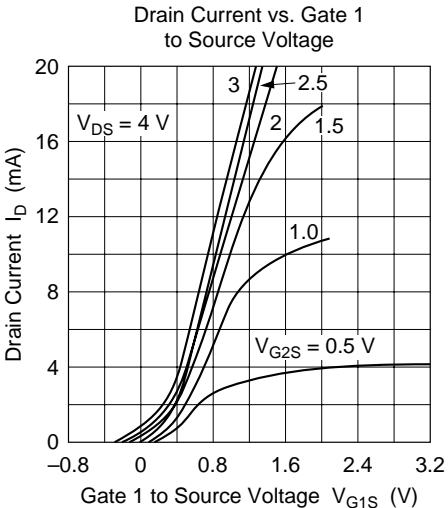
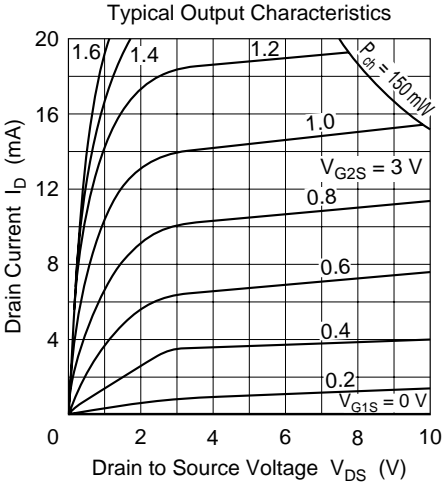
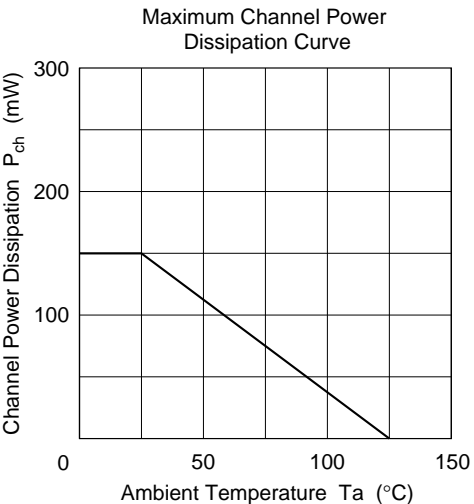
Absolute Maximum Ratings (Ta = 25°C)

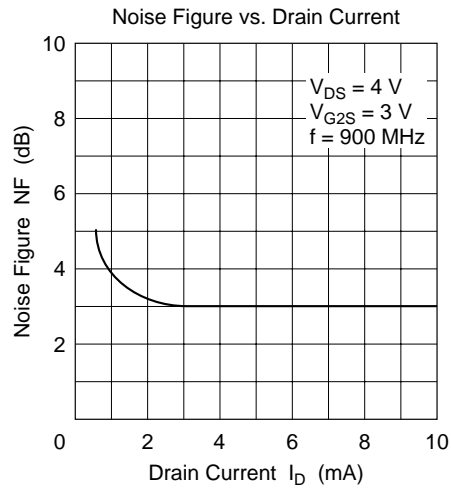
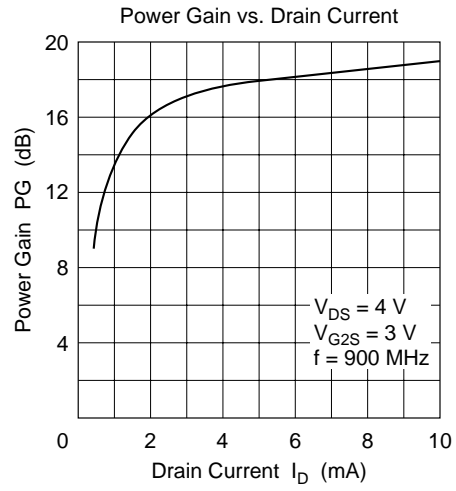
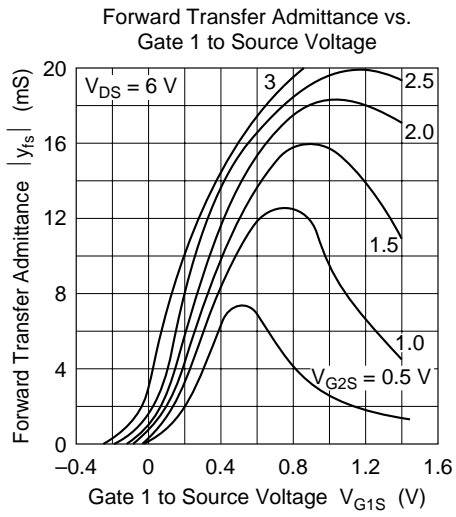
Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DS}	12	V
Gate 1 to source voltage	V_{G1S}	±10	V
Gate 2 to source voltage	V_{G2S}	±10	V
Drain current	I_D	35	mA
Channel power dissipation	Pch	150	mW
Channel temperature	Tch	125	°C
Storage temperature	Tstg	-55 to +125	°C

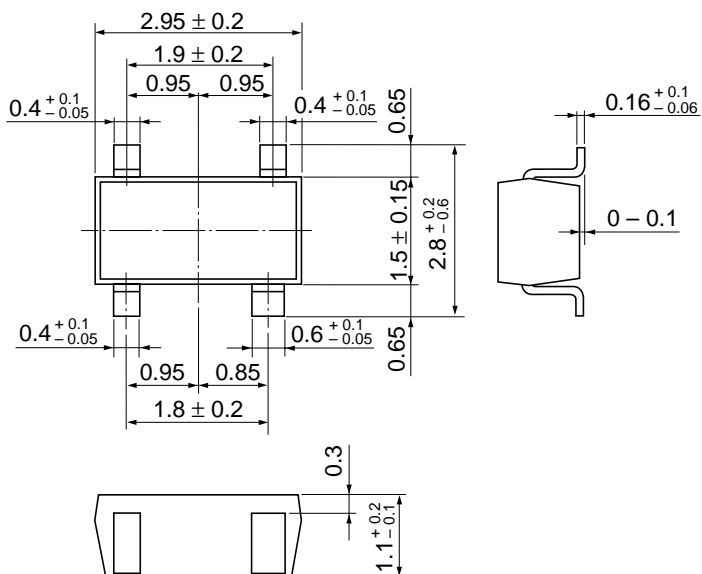
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSX}$	12	—	—	V	$V_{G1S} = V_{G2S} = -5$ V, $I_D = 200$ μ A
Gate 1 to source breakdown voltage	$V_{(BR)G1SS}$	±10	—	—	V	$I_{G1} = \pm 10$ μ A, $V_{G2S} = V_{DS} = 0$
Gate 2 to source breakdown voltage	$V_{(BR)G2SS}$	±10	—	—	V	$I_{G2} = \pm 10$ μ A, $V_{G1S} = V_{DS} = 0$
Gate 1 cutoff current	I_{G1SS}	—	—	±100	nA	$V_{G1S} = \pm 8$ V, $V_{G2S} = V_{DS} = 0$
Gate 2 cutoff current	I_{G2SS}	—	—	±100	nA	$V_{G2S} = \pm 8$ V, $V_{G1S} = V_{DS} = 0$
Gate 1 to source cutoff voltage	$V_{G1S(off)}$	+0.5	—	-0.8	V	$V_{DS} = 6$ V, $V_{G2S} = 3$ V, $I_D = 100$ μ A
Gate 2 to source cutoff voltage	$V_{G2S(off)}$	+0.5	—	-0.8	V	$V_{DS} = 6$ V, $V_{G1S} = 3$ V, $I_D = 100$ μ A
Drain current	I_{DSS}	0	—	4	mA	$V_{DS} = 6$ V, $V_{G2S} = 3$ V, $V_{G1S} = 0$
Forward transfer admittance	$ y_{fs} $	15	—	—	mS	$V_{DS} = 6$ V, $V_{G2S} = 3$ V, $I_D = 10$ mA, $f = 1$ kHz
Input capacitance	Ciss	—	1.7	2.2	pF	$V_{DS} = 6$ V, $V_{G2S} = 3$ V, $I_D = 10$ mA, $f = 1$ MHz
Output capacitance	Coss	—	1.0	1.4	pF	
Reverse transfer capacitance	Crss	—	0.017	0.03	pF	
Power gain	PG	16	19	—	dB	$V_{DS} = 4$ V, $V_{G2S} = 3$ V, $I_D = 10$ mA, $f = 900$ MHz
Noise figure	NF	—	3.0	4.5	dB	

Note: Marking is "FI-".







Unit: mm

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