

2SK2802

Silicon N Channel MOS FET
Low Frequency Power Switching

HITACHI

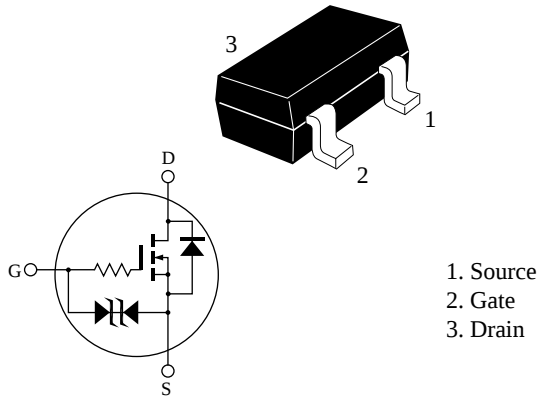
ADE-208-537C (Z)
4th. Edition
Jun 1998

Features

- Low on-resistance
 $R_{DS(on)} = 0.2\Omega$ typ. ($V_{GS} = 4\text{ V}$, $I_D = 100\text{ mA}$)
- 2.5V gate drive devices.
- Small package (MPAK)

Outline

MPAK



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	30	V
Gate to source voltage	V_{GSS}	± 10	V
Drain current	I_D	0.5	A
Drain peak current	$I_{D(pulse)}$ ^{Note1}	1.0	A
Channel dissipation	P_{ch} ^{Note2}	150	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	−55 to +150	°C

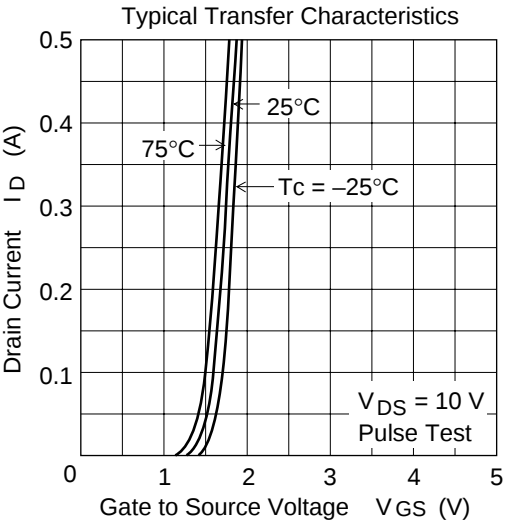
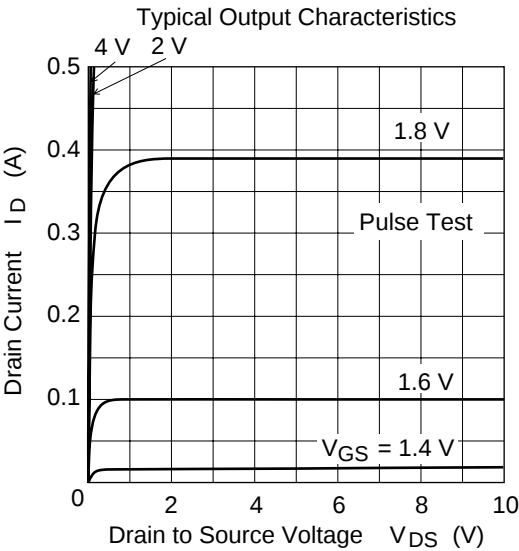
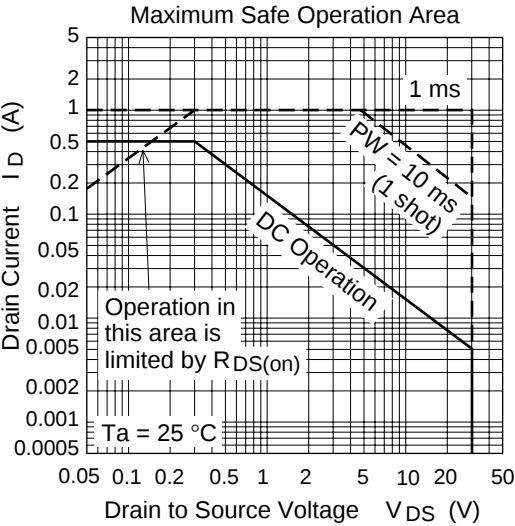
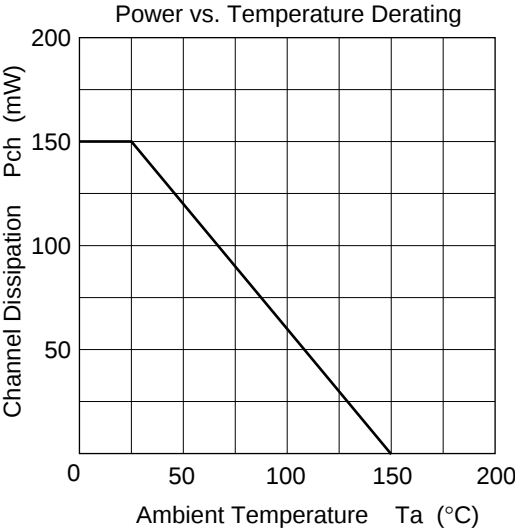
Note: 1. $PW \leq 10\mu s$, duty cycle $\leq 1\%$

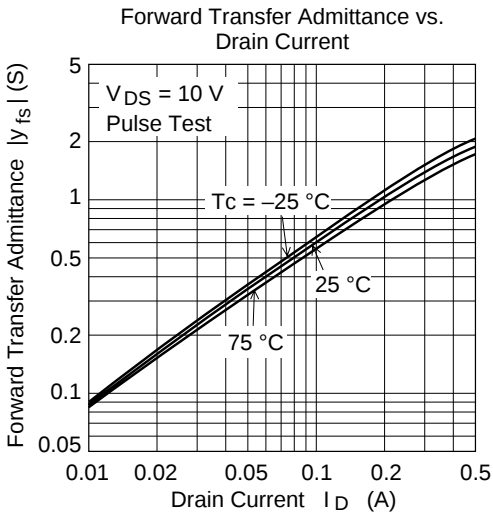
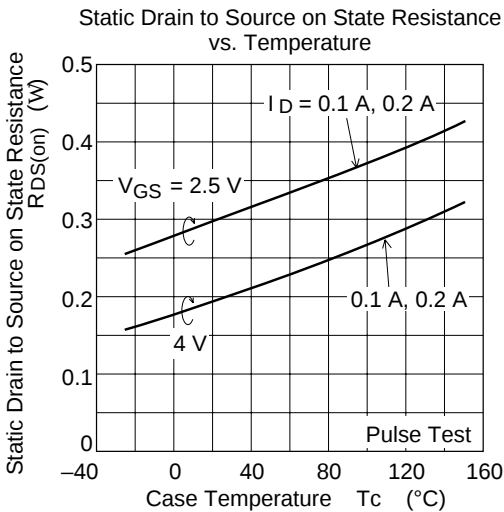
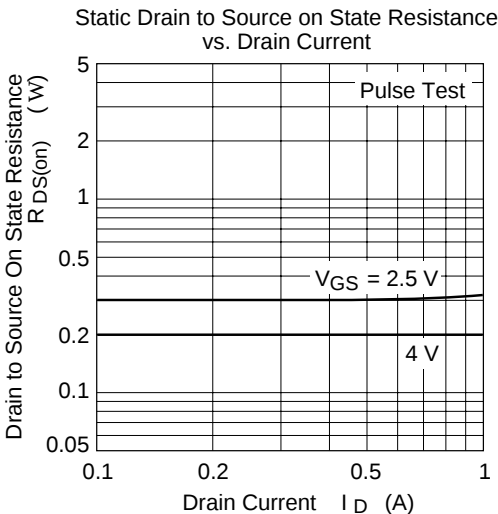
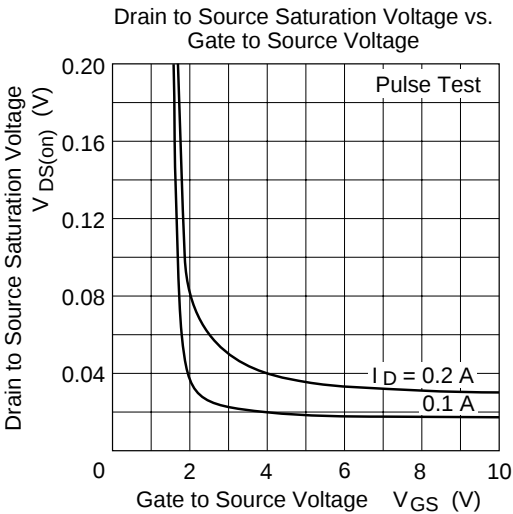
Electrical Characteristics (Ta = 25°C)

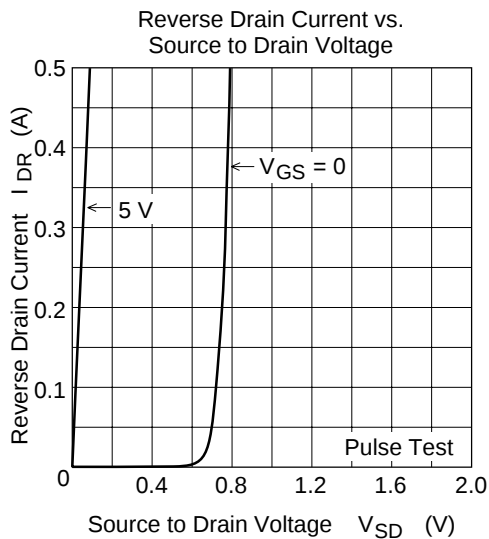
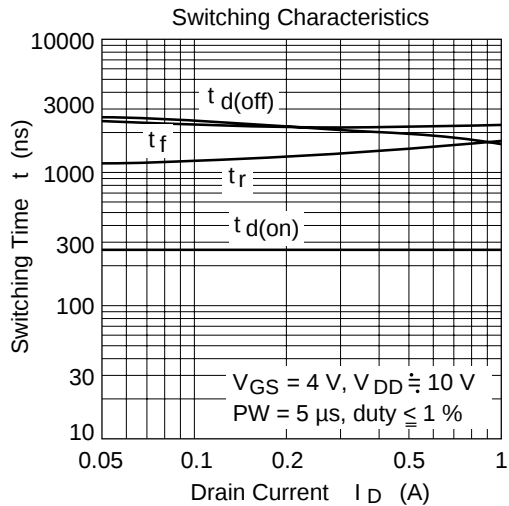
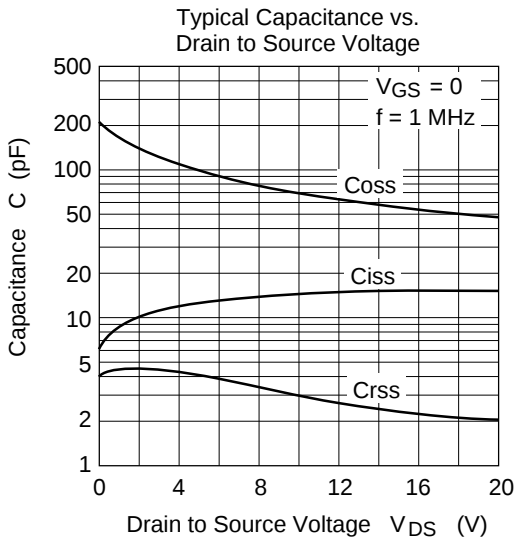
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 100\mu A$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 10	—	—	V	$I_G = \pm 100\mu A$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1.0	μA	$V_{DS} = 30\text{ V}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 6.5\text{ V}$, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0.5	—	1.5	V	$I_D = 10\mu A$, $V_{DS} = 5\text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.2	0.28	Ω	$I_D = 100\text{ mA}$ $V_{GS} = 4\text{ V}$ ^{Note2}
Static drain to source on state resistance	$R_{DS(on)}$	—	0.3	0.5	Ω	$I_D = 40\text{ mA}$ $V_{GS} = 2.5\text{ V}$ ^{Note2}
Forward transfer admittance	$ y_{fs} $	0.7	1.2	—	S	$I_D = 250\text{ mA}$ $V_{DS} = 10\text{ V}$ ^{Note2}
Input capacitance	C_{iss}	—	14.0	—	pF	$V_{DS} = 10\text{ V}$
Output capacitance	C_{oss}	—	68	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	3.0	—	pF	$f = 1\text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	0.27	—	μs	$V_{GS} = 4\text{ V}$, $I_D = 250\text{ mA}$
Rise time	t_r	—	1.5	—	μs	$R_L = 40\Omega$
Turn-off delay time	$t_{d(off)}$	—	2.2	—	μs	
Fall time	t_f	—	2.15	—	μs	

Note: 2. Pulse test
3. Marking is “ZV—”

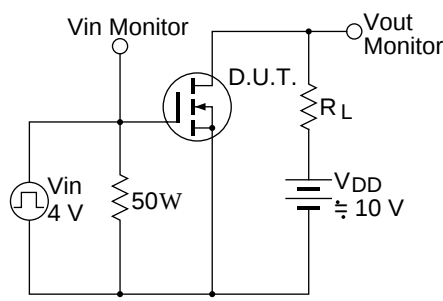
Main Characteristics



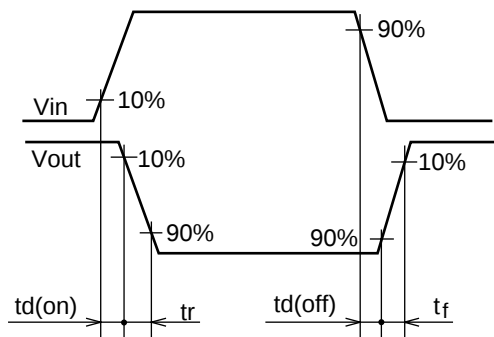




Switching Time Test Circuit

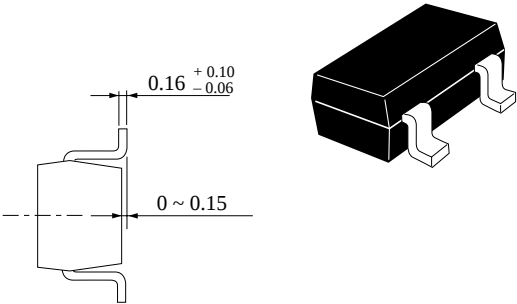
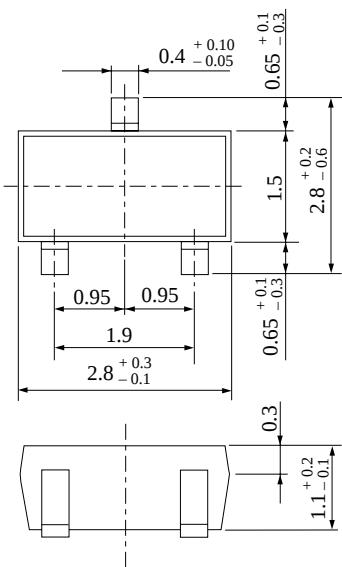


Waveform



Package Dimensions

Unit: mm



Hitachi Code	MPAK
EIAJ	SC-59A
JEDEC	TO-236Mod.

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