

# 2SK2802

Silicon N Channel MOS FET  
Low Frequency Power Switching

# HITACHI

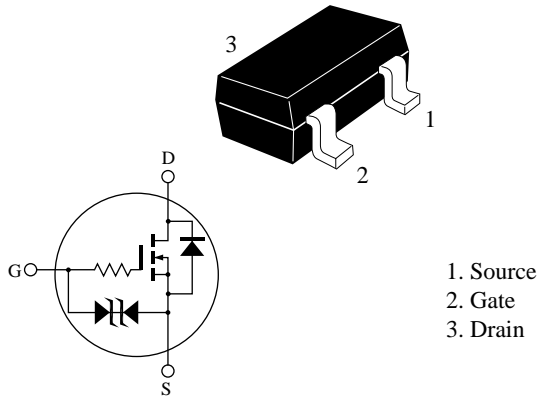
ADE-208-537C (Z)  
4th. Edition  
Jun 1998

## 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	$I_{D(pulse)}$ <sup>Note1</sup>	1.0	A
Channel dissipation	$P_{ch}$ <sup>Note2</sup>	150	mW
Channel temperature	$T_{ch}$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

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

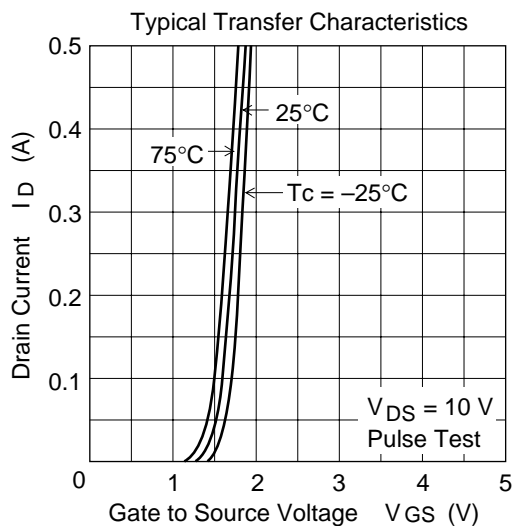
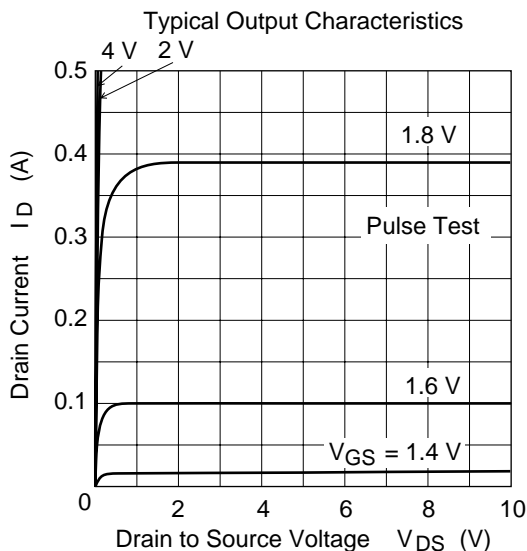
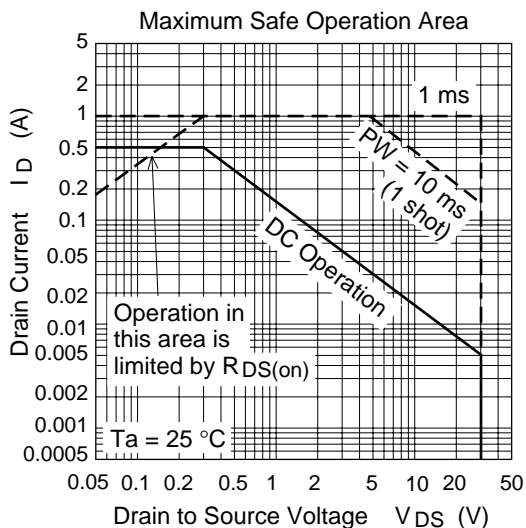
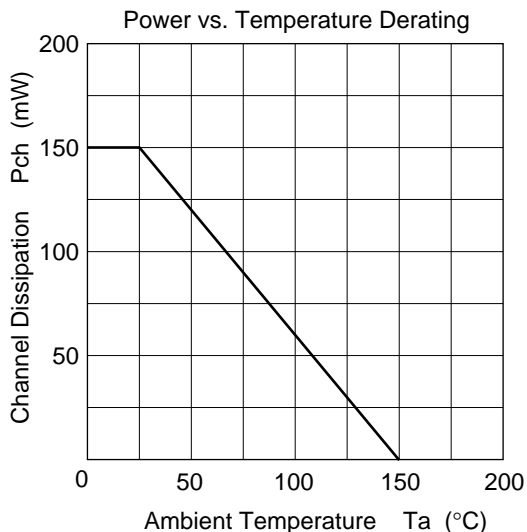
## Electrical Characteristics (Ta = 25°C)

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	$V_{DS} = 30 V$ , $V_{GS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	±10	μA	$V_{GS} = \pm 6.5V$ , $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0.5	—	1.5	V	$I_D = 10\mu A$ , $V_{DS} = 5V$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.2	0.28	Ω	$I_D = 100 mA$ $V_{GS} = 4V$ <sup>Note2</sup>
Static drain to source on state resistance	$R_{DS(on)}$	—	0.3	0.5	Ω	$I_D = 40 mA$ $V_{GS} = 2.5V$ <sup>Note2</sup>
Forward transfer admittance	$ y_{fs} $	0.7	1.2	—	S	$I_D = 250 mA$ $V_{DS} = 10V$ <sup>Note2</sup>
Input capacitance	$C_{iss}$	—	14.0	—	pF	$V_{DS} = 10V$
Output capacitance	$C_{oss}$	—	68	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	3.0	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$	—	0.27	—	μs	$V_{GS} = 4V$ , $I_D = 250 mA$
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	

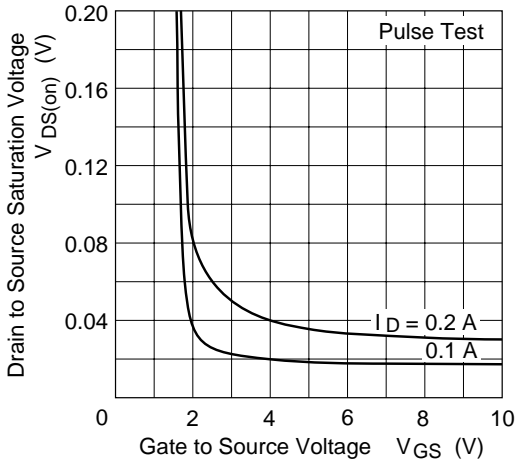
Note: 2. Pulse test

3. Marking is "ZV—"

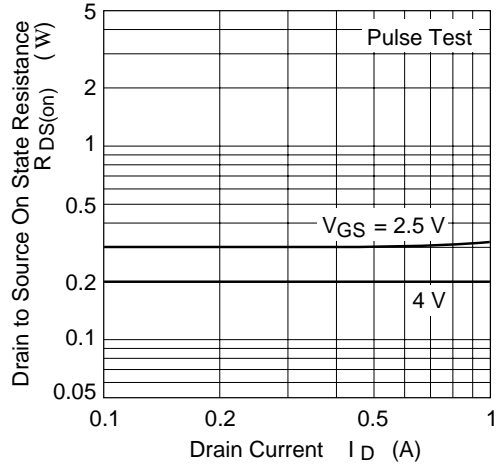
### Main Characteristics



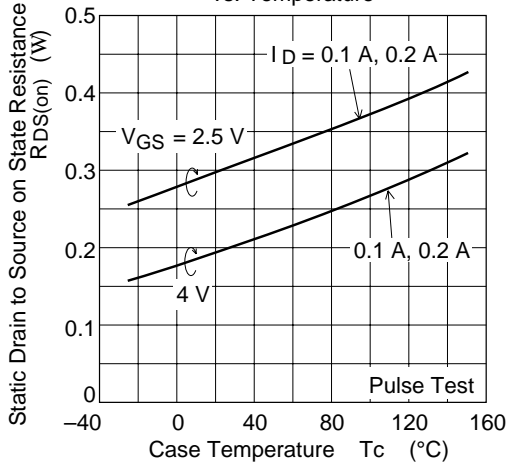
Drain to Source Saturation Voltage vs. Gate to Source Voltage



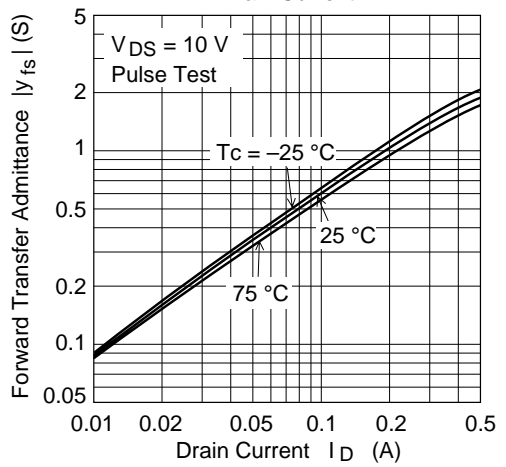
Static Drain to Source on State Resistance vs. Drain Current

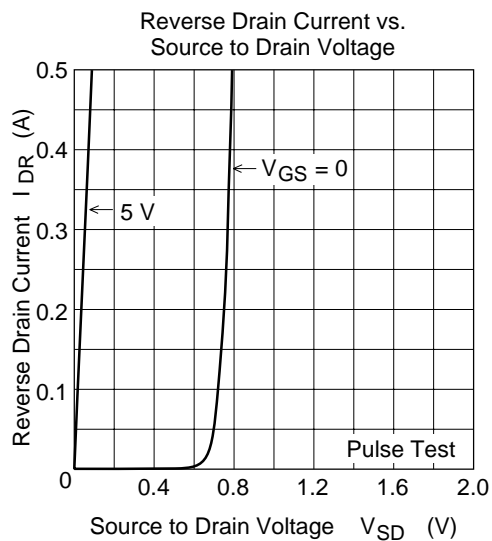
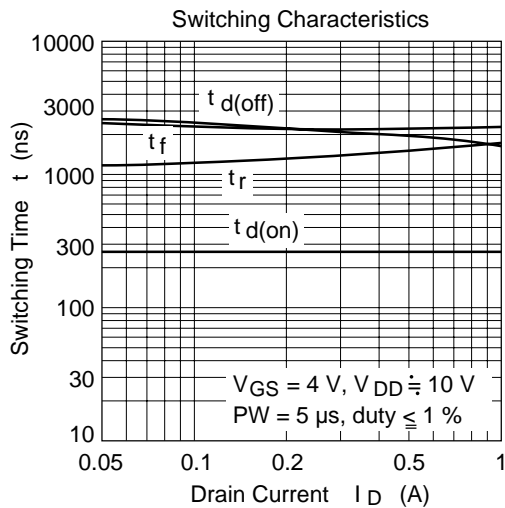
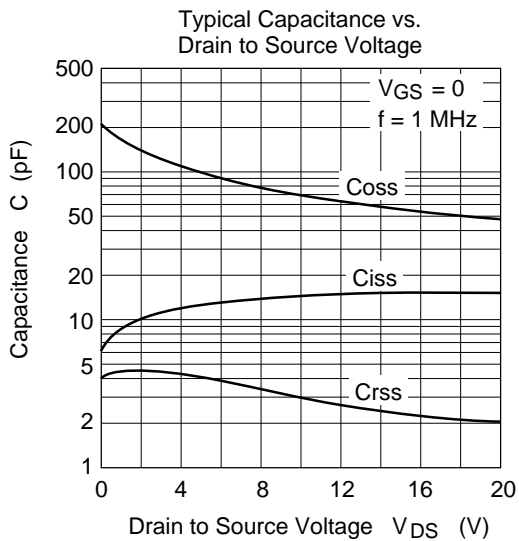


Static Drain to Source on State Resistance vs. Temperature

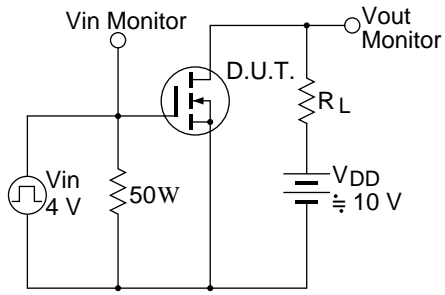


Forward Transfer Admittance vs. Drain Current

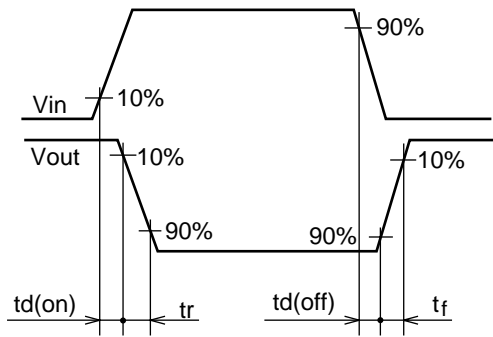




Switching Time Test Circuit

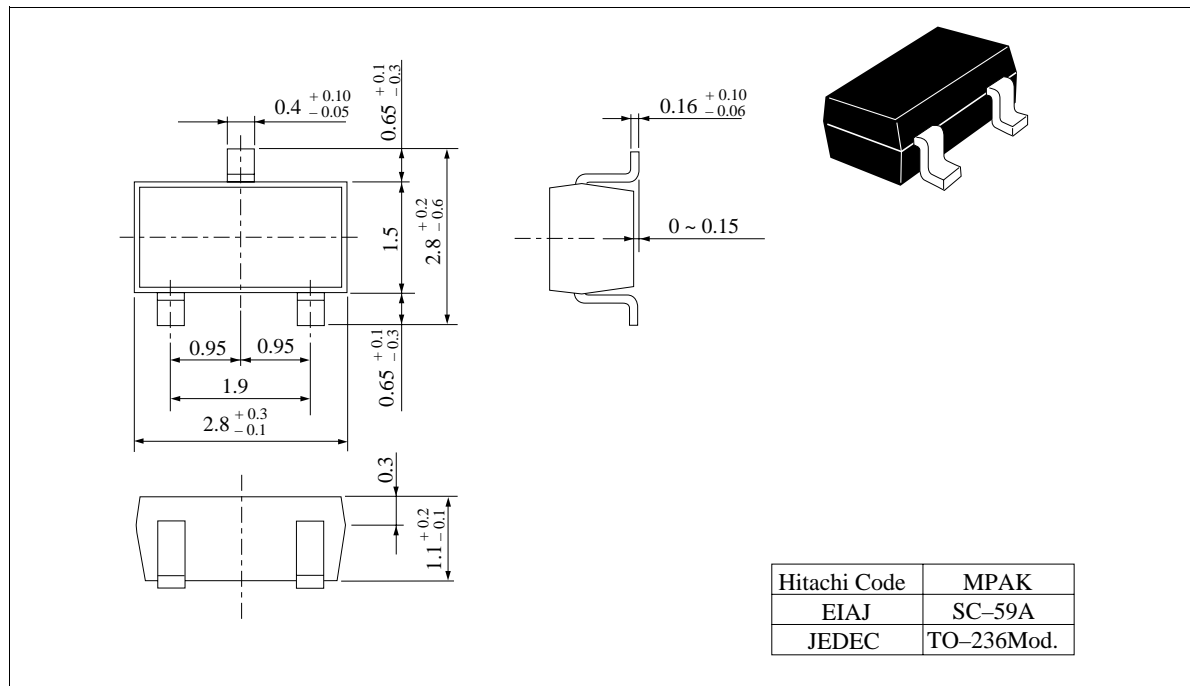


Waveform



## Package Dimensions

Unit: mm



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