

2SK2802

Silicon N Channel MOS FET
Low Frequency Power Switching

HITACHI

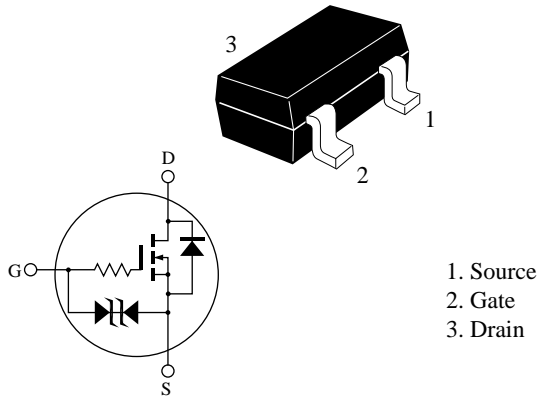
ADE-208-537C (Z)
4th. Edition
Jun 1998

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	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

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

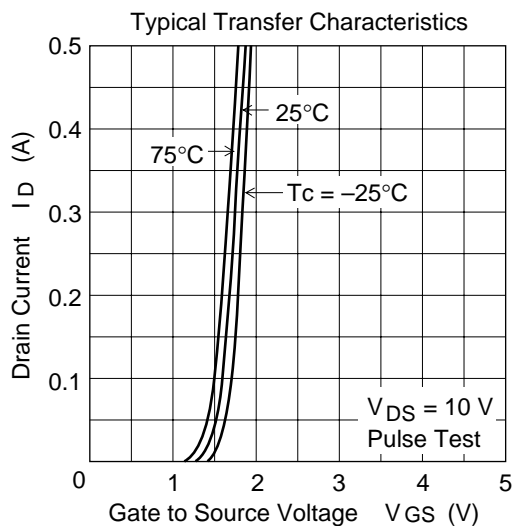
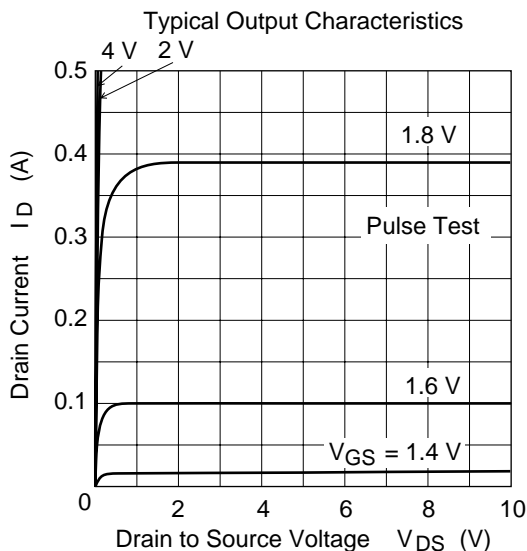
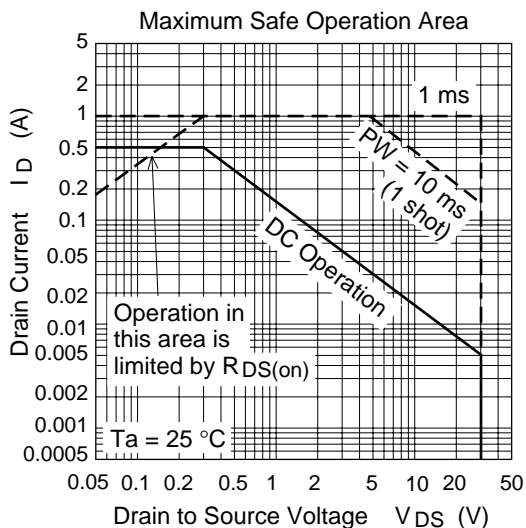
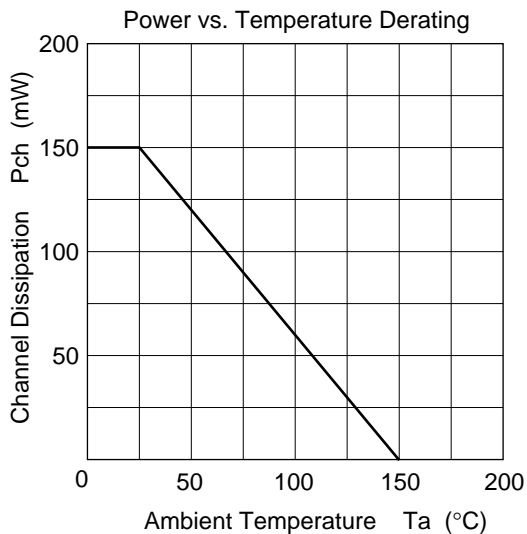
Electrical Characteristics (Ta = 25°C)

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	$I_D = 100 mA$ $V_{GS} = 4V$ ^{Note2}
Static drain to source on state resistance	$R_{DS(on)}$	—	0.3	0.5	Ω	$I_D = 40 mA$ $V_{GS} = 2.5V$ ^{Note2}
Forward transfer admittance	$ y_{fs} $	0.7	1.2	—	S	$I_D = 250 mA$ $V_{DS} = 10V$ ^{Note2}
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	

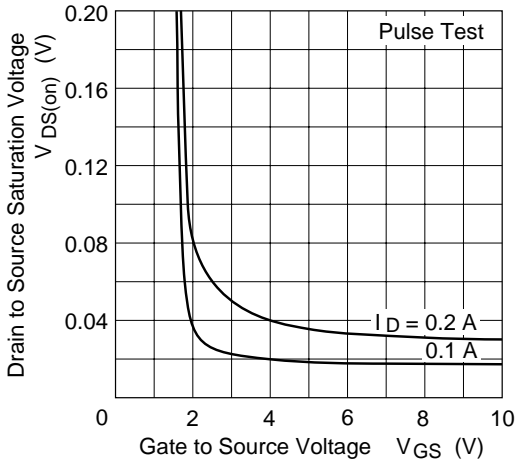
Note: 2. Pulse test

3. Marking is "ZV—"

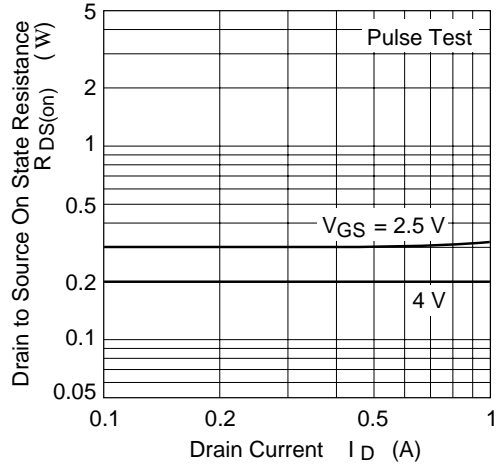
Main Characteristics



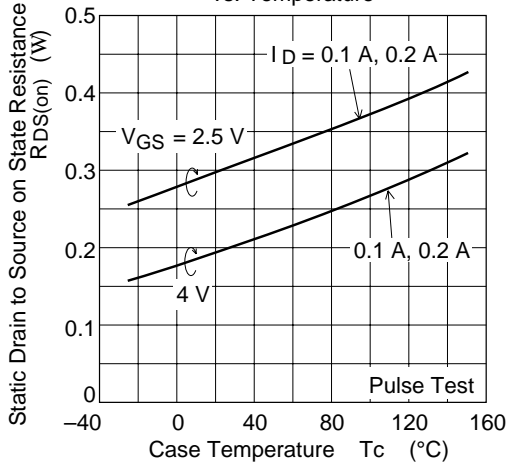
Drain to Source Saturation Voltage vs. Gate to Source Voltage



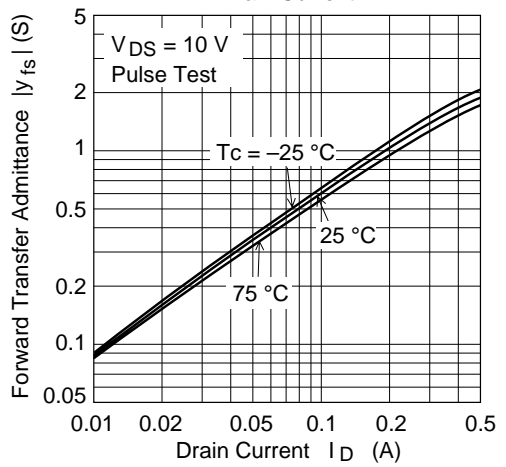
Static Drain to Source on State Resistance vs. Drain Current

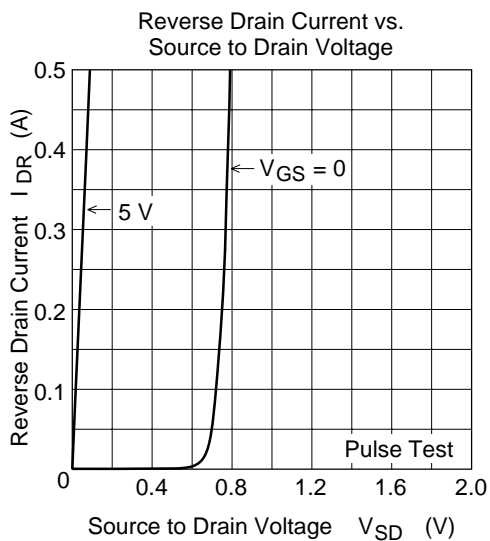
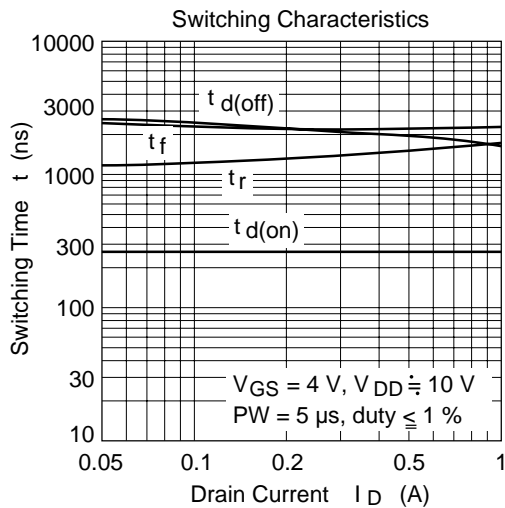
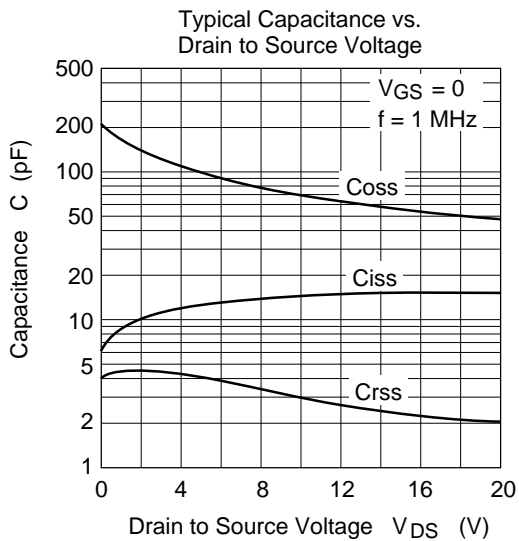


Static Drain to Source on State Resistance vs. Temperature

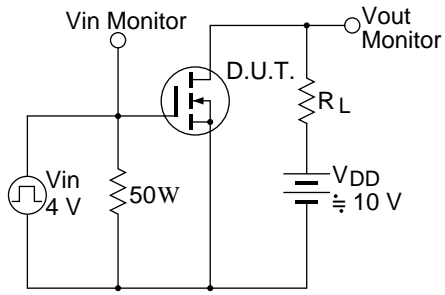


Forward Transfer Admittance vs. Drain Current

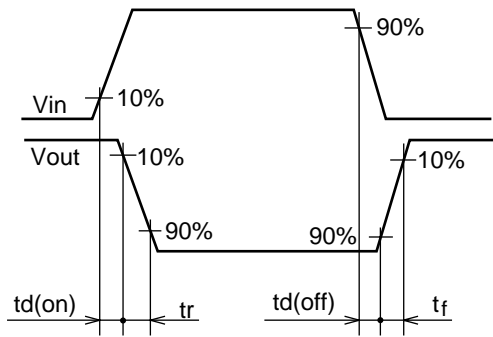




Switching Time Test Circuit

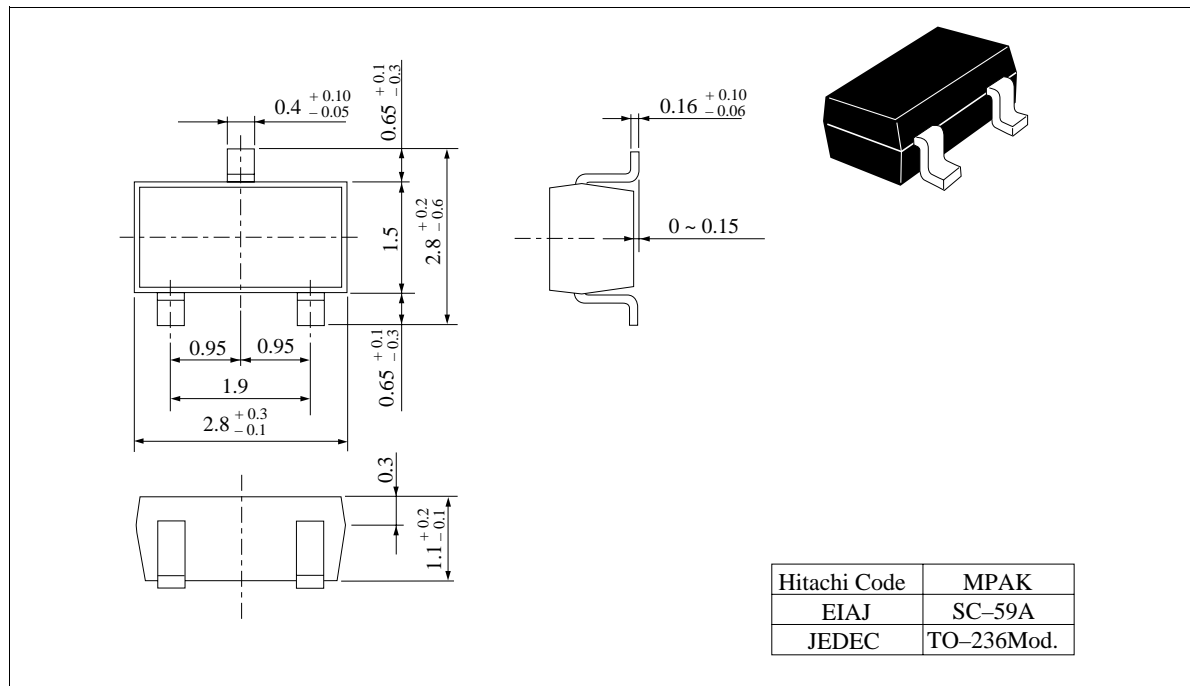


Waveform



Package Dimensions

Unit: mm



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