

2SJ518

Silicon P Channel MOS FET
High Speed Power Switching

HITACHI

ADE-208-580B (Z)

3rd. Edition

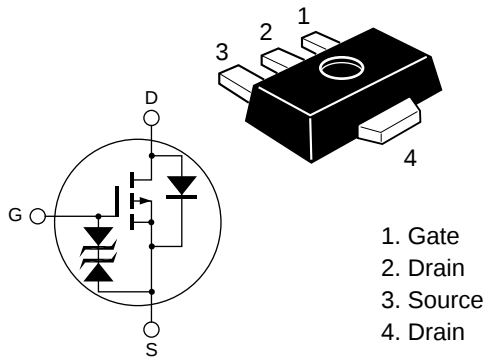
Jun 1998

Features

- Low on-resistance
 $R_{DS(on)} = 0.35 \Omega$ typ. at ($V_{GS} = -10V$, $I_D = -1A$)
- Low drive current
- 4 V gate drive devices
- High speed switching

Outline

UPAK



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	−60	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	−2	A
Drain peak current	I _{D(pulse)} ^{Note1}	−4	A
Body-drain diode reverse drain current	I _{DR}	−2	A
Avalanche current	I _{AP} ^{Note2}	−2	A
Avalanche energy	E _{AR}	0.34	mJ
Channel dissipation	Pch ^{Note3}	1	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	−55 to +150	°C

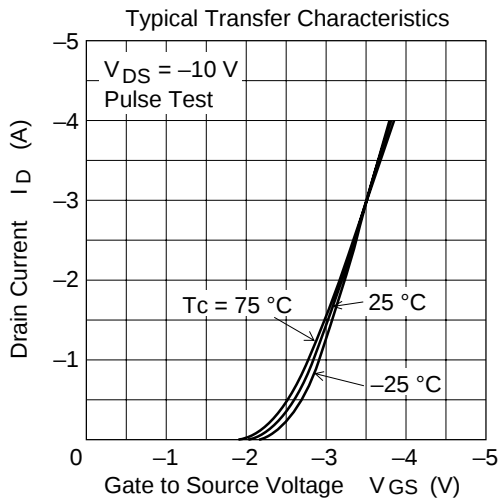
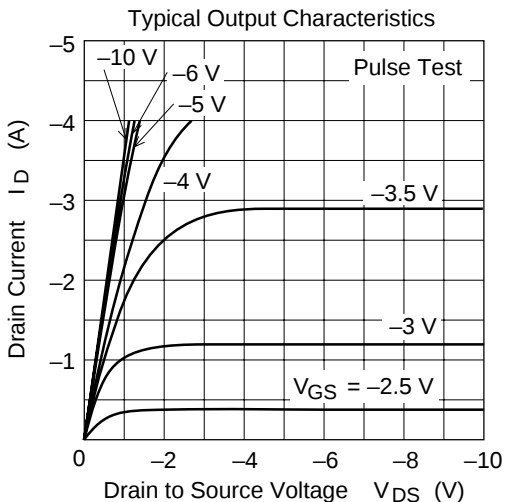
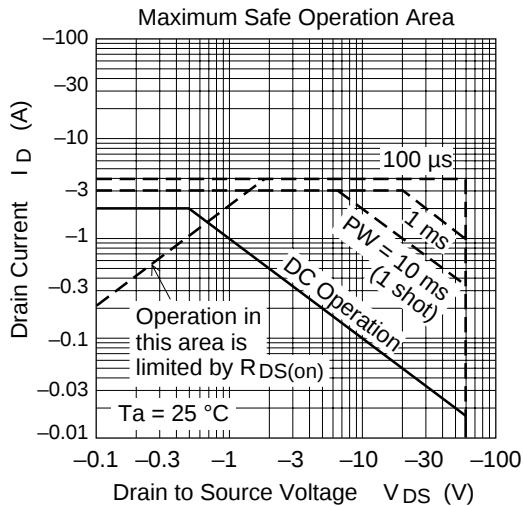
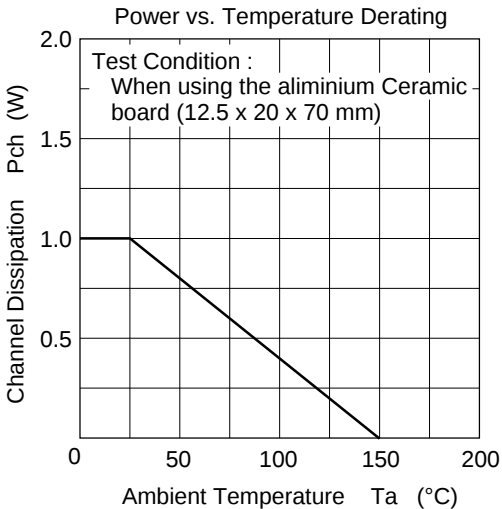
Note: 1. PW ≤ 10μs, duty cycle ≤ 1 %
2. value at Tch = 25°C, Rg ≥ 50 Ω
3. Value at when using the aluminaceramic board (12.5x20x0.7mm)

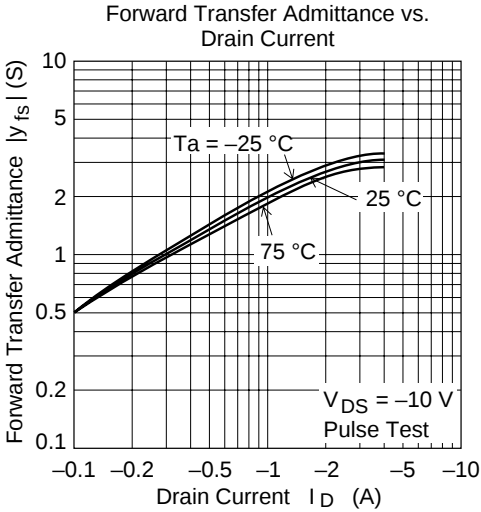
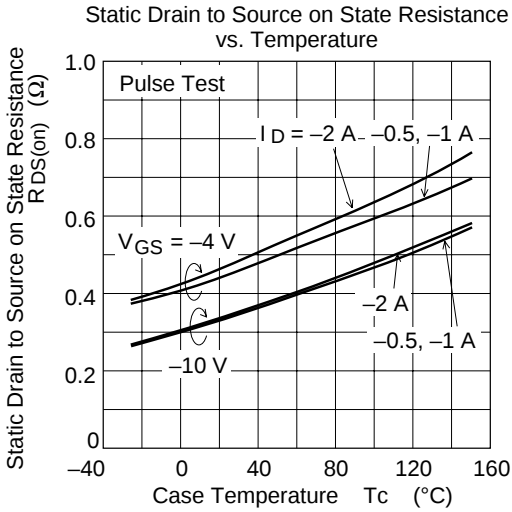
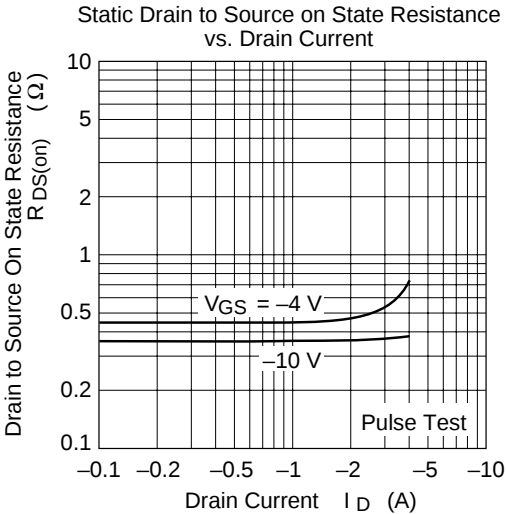
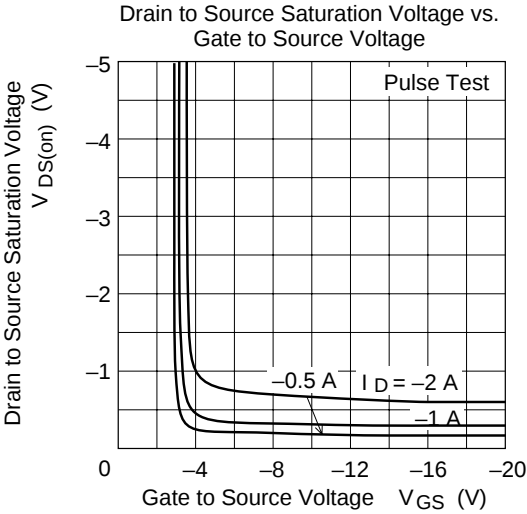
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR)DSS}	−60	—	—	V	I _D = −10mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR)GSS}	±20	—	—	V	I _G = ±100μA, V _{DS} = 0
Zero gate voltege drain current	I _{DSS}	—	—	−10	μA	V _{DS} = −60 V, V _{GS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±16V, V _{DS} = 0
Gate to source cutoff voltage	V _{GS(off)}	−1.0	—	−2.0	V	I _D = −1mA, V _{DS} = −10V
Static drain to source on state resistance	R _{DS(on)}	—	0.35	0.46	Ω	I _D = −1A, V _{GS} = −10V ^{Note4}
	R _{DS(on)}	—	0.45	0.63	Ω	I _D = −1A, V _{GS} = −4V ^{Note4}
Forward transfer admittance	y _{fs}	1.2	2.0	—	S	I _D = −1A, V _{DS} = −10V ^{Note4}
Input capacitance	Ciss	—	220	—	pF	V _{DS} = −10V
Output capacitance	Coss	—	110	—	pF	V _{GS} = 0
Reverse transfer capacitance	Crss	—	35	—	pF	f = 1MHz
Turn-on delay time	t _{d(on)}	—	10	—	ns	V _{GS} = −10V, I _D = −1A
Rise time	t _r	—	11	—	ns	R _L = 30Ω
Turn-off delay time	t _{d(off)}	—	45	—	ns	
Fall time	t _f	—	30	—	ns	
Body–drain diode forward voltage	V _{DF}	—	−1.05	—	V	I _D = −2A, V _{GS} = 0
Body–drain diode reverse recovery time	t _{rr}	—	50	—	ns	I _F = −2A, V _{GS} = 0 diF/ dt = 50A/μs

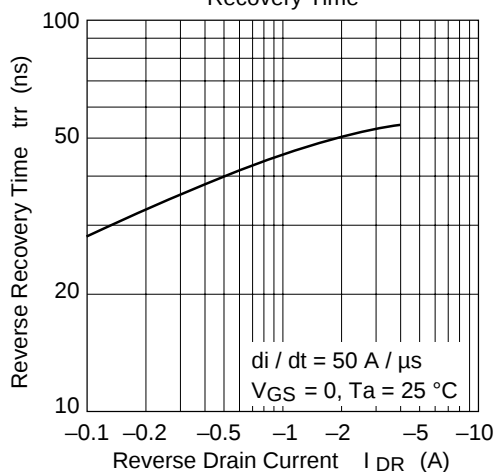
Note: 4. Pulse test
5. Marking is “AZ”

Main Characteristics

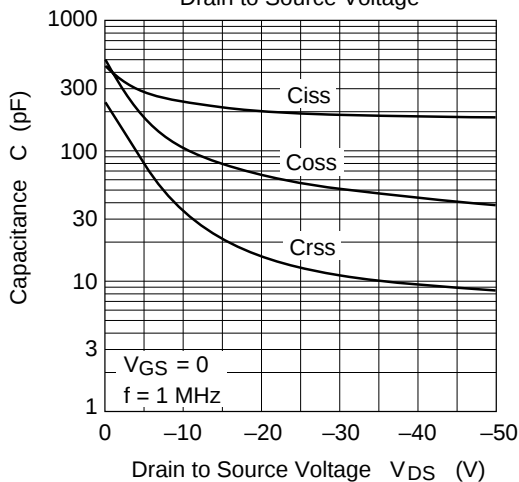




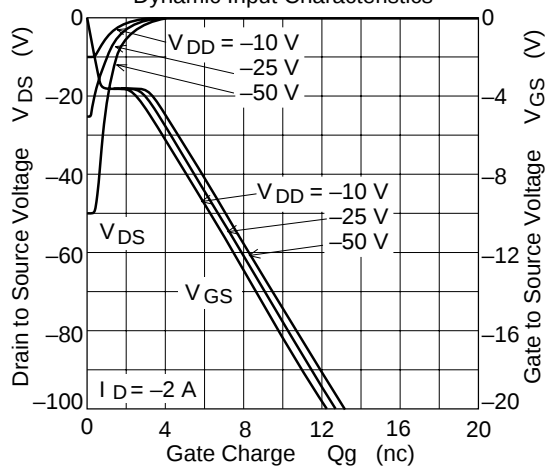
Body-Drain Diode Reverse Recovery Time



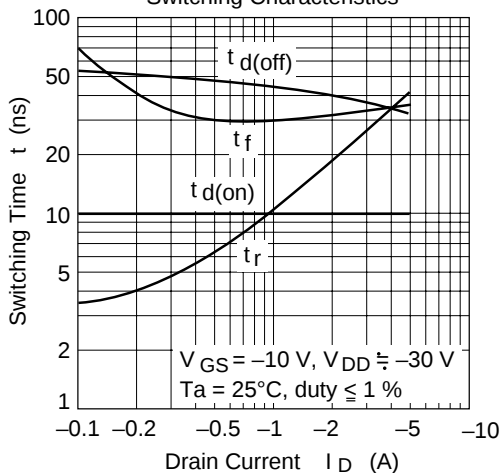
Typical Capacitance vs. Drain to Source Voltage

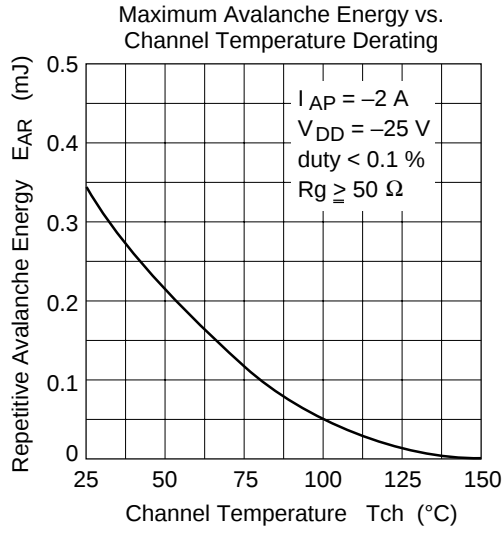
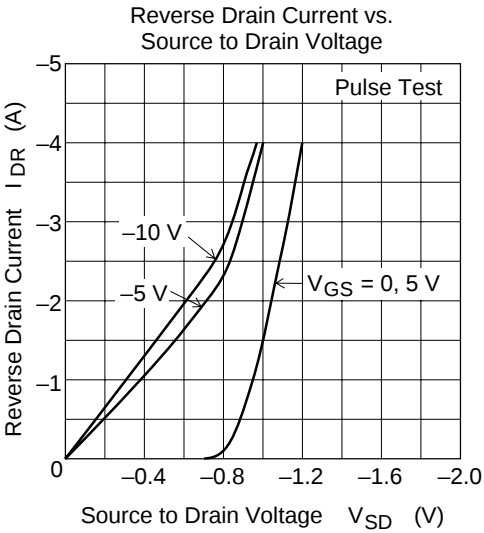


Dynamic Input Characteristics

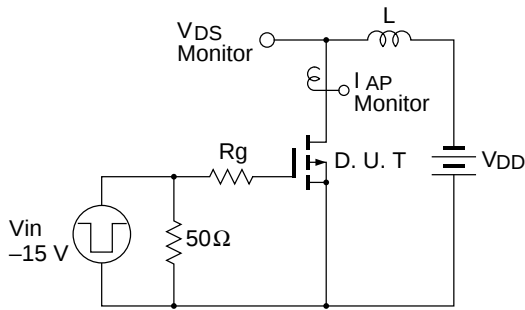


Switching Characteristics

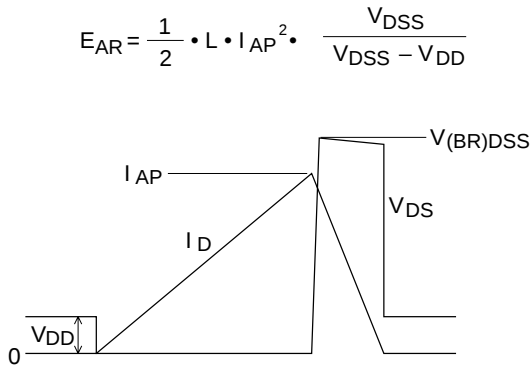




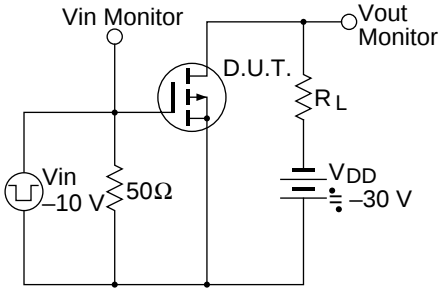
Avalanche Test Circuit



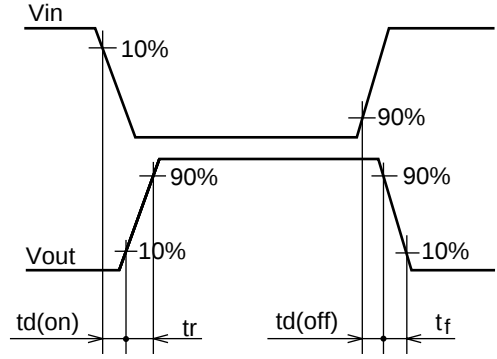
Avalanche Waveform



Switching Time Test Circuit

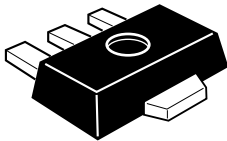
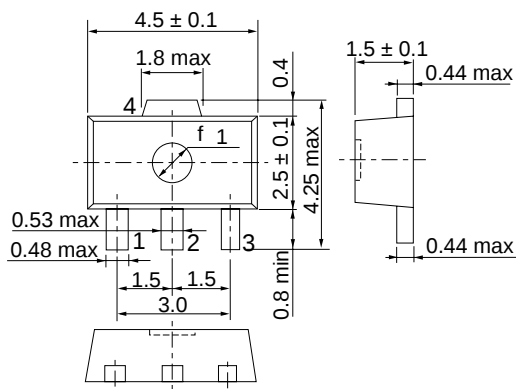


Waveform



Package Dimensions

Unit: mm



Hitachi Code	UPAK
EIAJ	SC-62
JEDEC	UPAK

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