
2SJ518

Silicon P Channel MOS FET
High Speed Power Switching

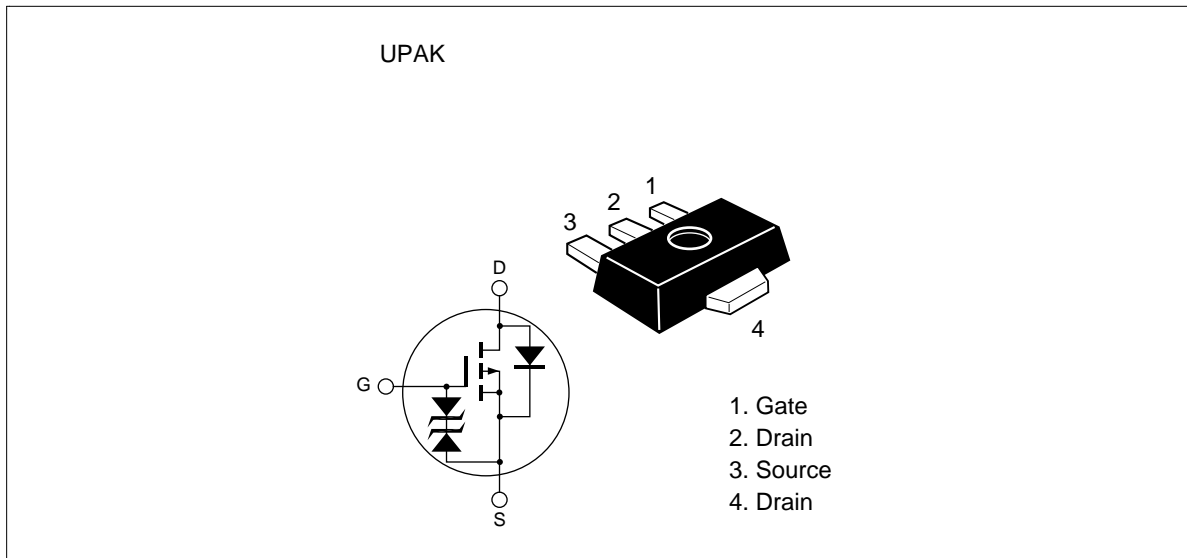
HITACHI

ADE-208-580B (Z)
3rd. Edition
June 1, 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



2SJ518

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	P_{ch} ^{Note3}	1	W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

- Note: 1. $PW \leq 10\mu s$, duty cycle $\leq 1\%$
2. value at $T_{ch} = 25^\circ C$, $R_g \geq 50 \Omega$
3. Value at when using the aluminaceramic board (12.5x20x0.7mm)

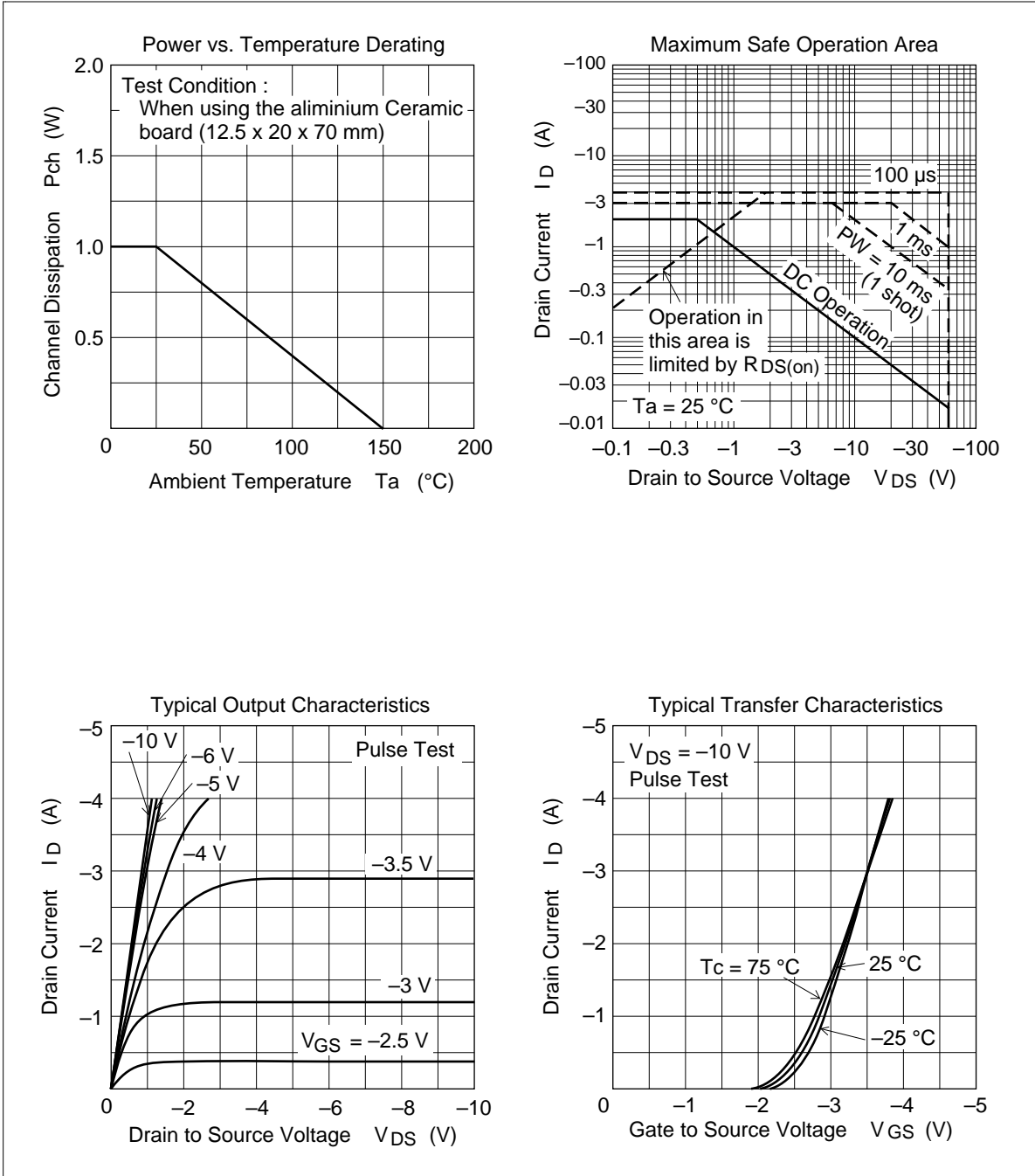
Electrical Characteristics (Ta = 25°C)

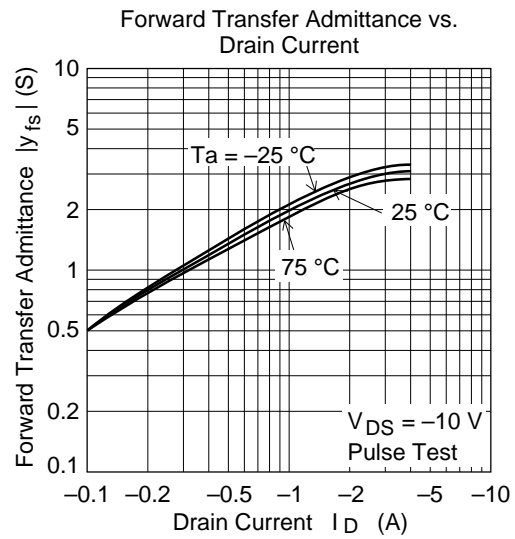
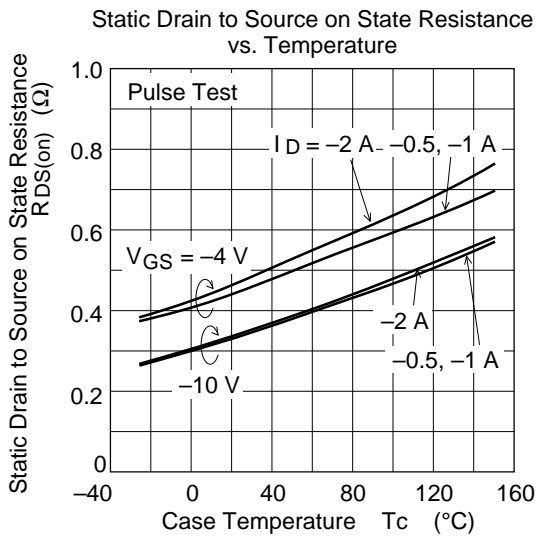
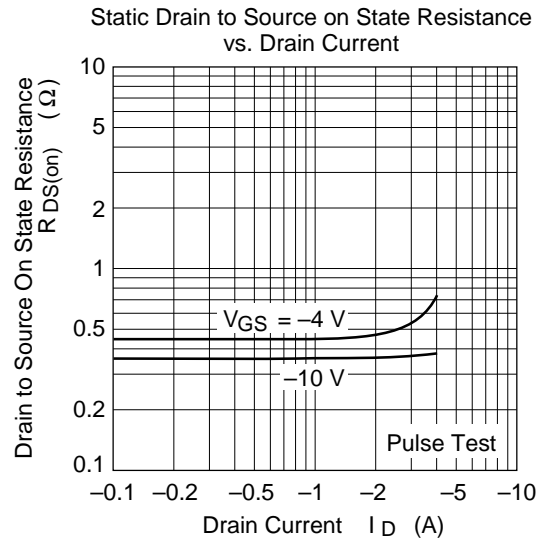
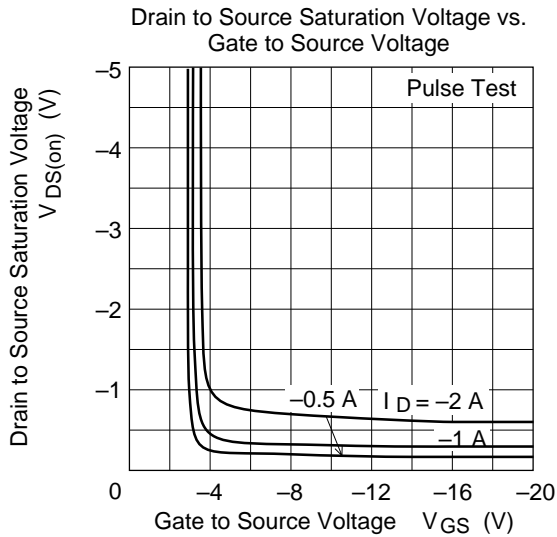
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-60	—	—	V	$I_D = -10\text{mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100\mu\text{A}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-10	μA	$V_{DS} = -60\text{V}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16\text{V}$, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-1.0	—	-2.0	V	$I_D = -1\text{mA}$, $V_{DS} = -10\text{V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.35	0.46	Ω	$I_D = -1\text{A}$, $V_{GS} = -10\text{V}$ ^{Note4}
	$R_{DS(on)}$	—	0.45	0.63	Ω	$I_D = -1\text{A}$, $V_{GS} = -4\text{V}$ ^{Note4}
Forward transfer admittance	$ y_{fs} $	1.2	2.0	—	S	$I_D = -1\text{A}$, $V_{DS} = -10\text{V}$ ^{Note4}
Input capacitance	Ciss	—	220	—	pF	$V_{DS} = -10\text{V}$
Output capacitance	Coss	—	110	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	35	—	pF	$f = 1\text{MHz}$
Turn-on delay time	$t_{d(on)}$	—	10	—	ns	$V_{GS} = -10\text{V}$, $I_D = -1\text{A}$
Rise time	t_r	—	11	—	ns	$R_L = 30\Omega$
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	$I_D = -2\text{A}$, $V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	50	—	ns	$I_F = -2\text{A}$, $V_{GS} = 0$ $di_F/dt = 50\text{A}/\mu\text{s}$

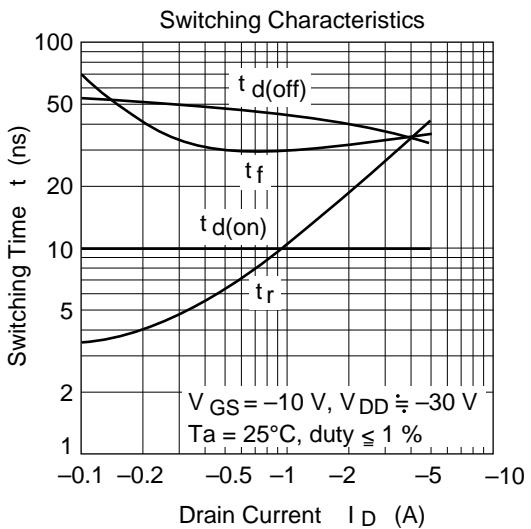
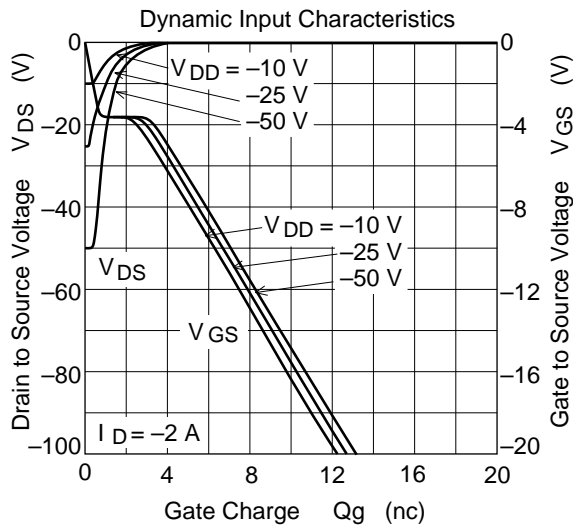
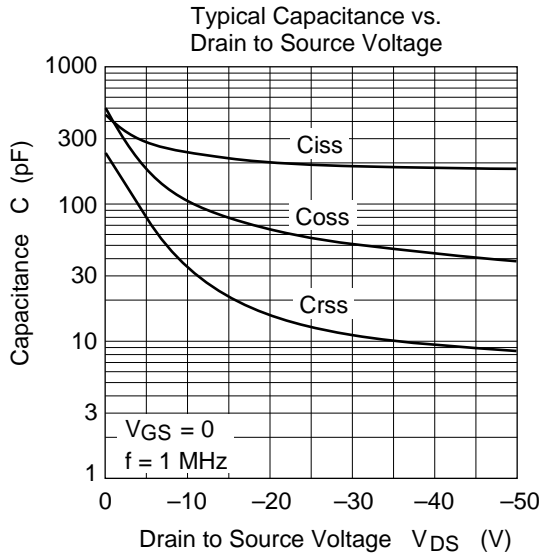
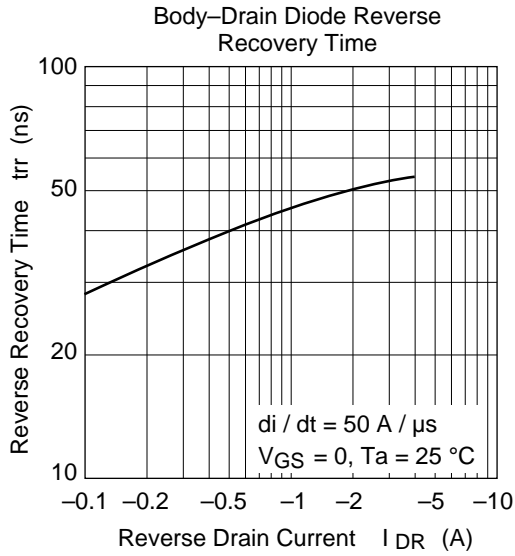
Note: 4. Pulse test
5. Marking is "AZ"

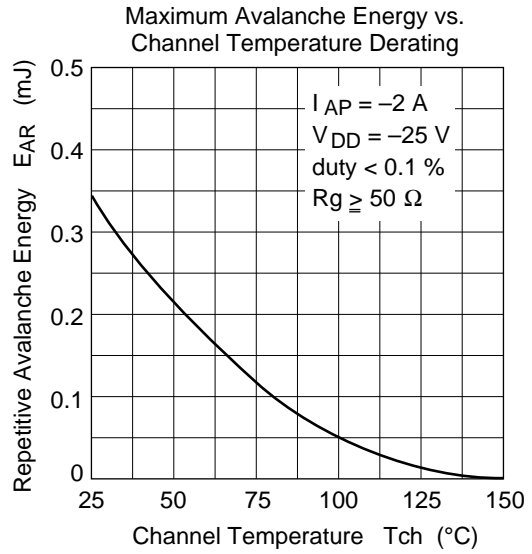
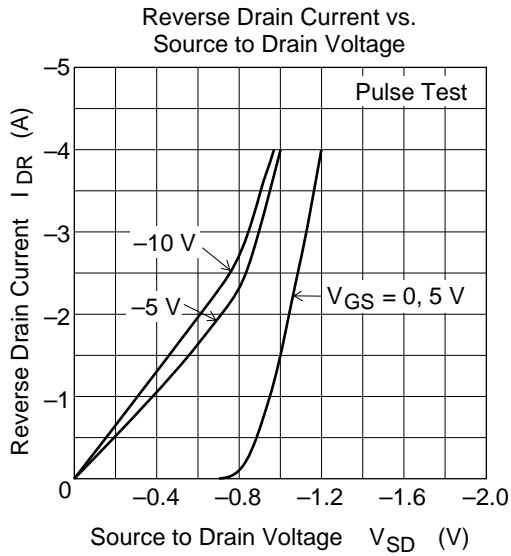
2SJ518

Main Characteristics

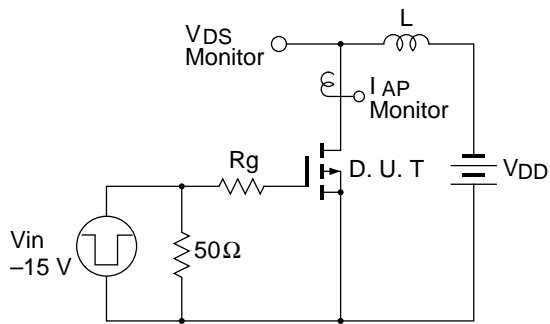




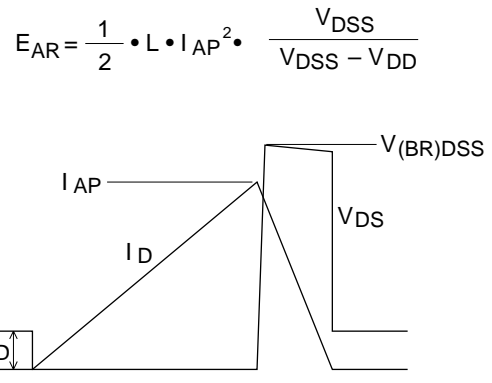




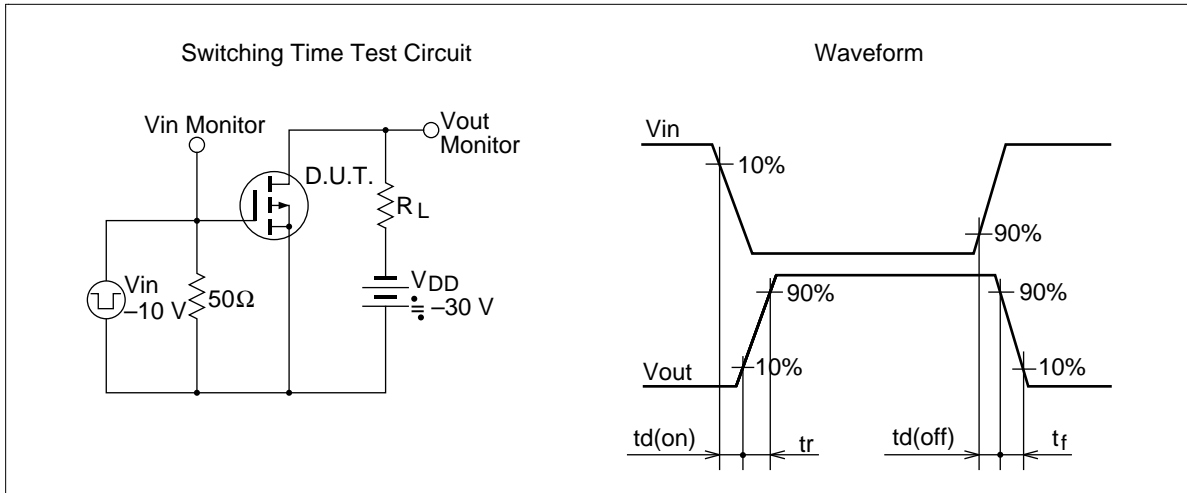
Avalanche Test Circuit



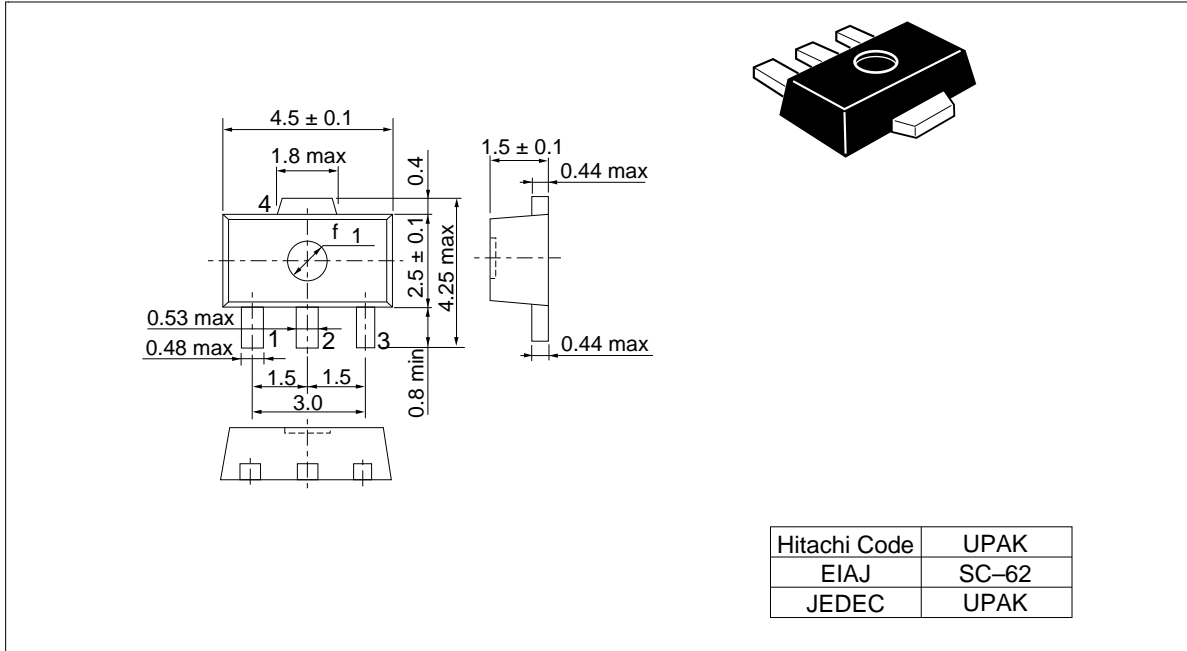
Avalanche Waveform



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Package Dimensions (Unit: mm)



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