
2SK1337

Silicon N-Channel MOS FET

HITACHI

Application

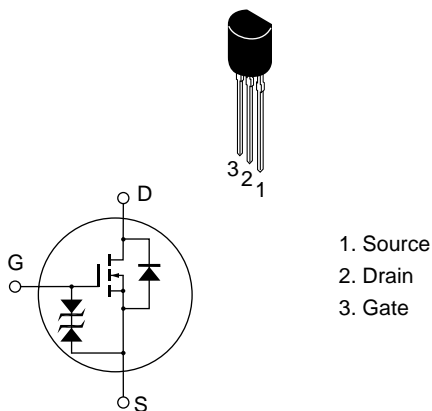
High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- 4 V gate drive device
 - Can be driven from 5 V source
- Suitable for motor drive, DC-DC converter, power switch and solenoid drive

Outline

TO-92



Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

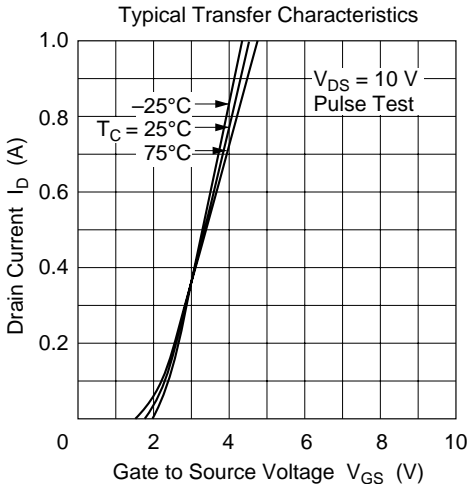
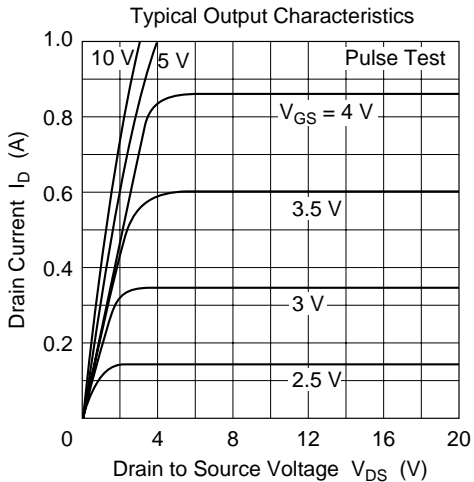
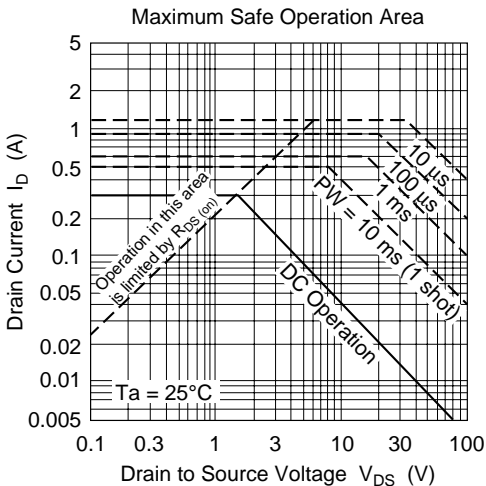
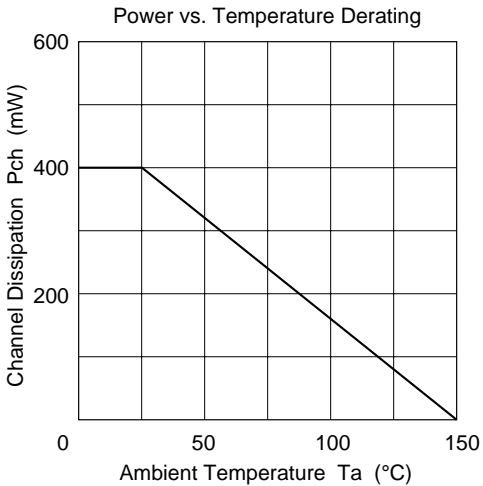
Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	100	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_{D}	0.3	A
Drain peak current	$I_{\text{D(pulse)}}^{*1}$	1.2	A
Body to drain diode reverse drain current	I_{DR}	0.3	A
Channel dissipation	Pch	400	mW
Channel temperature	Tch	150	$^\circ\text{C}$
Storage temperature	Tstg	-55 to $+150$	$^\circ\text{C}$

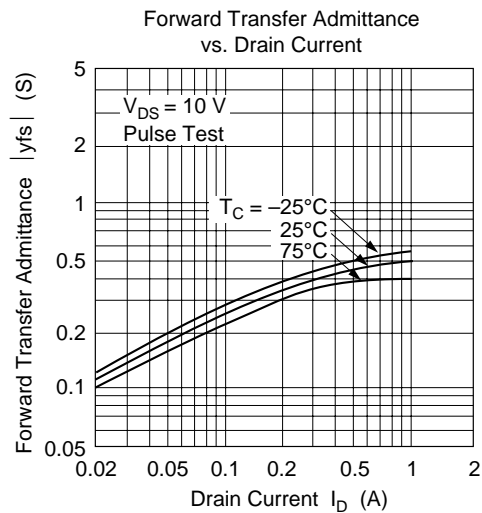
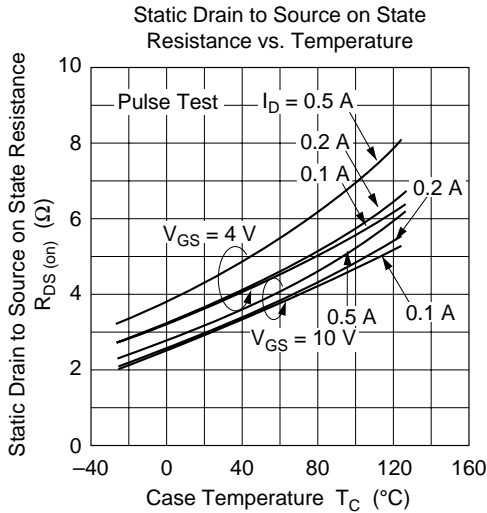
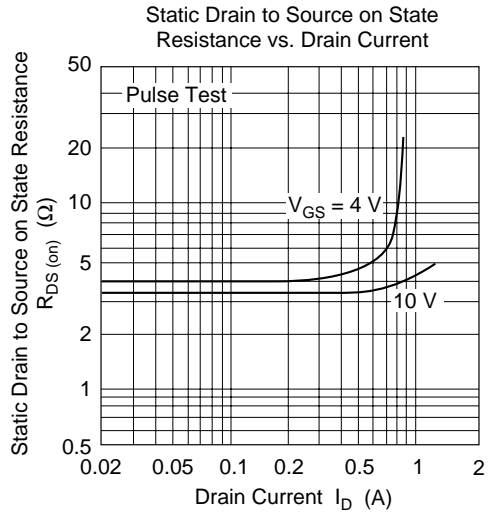
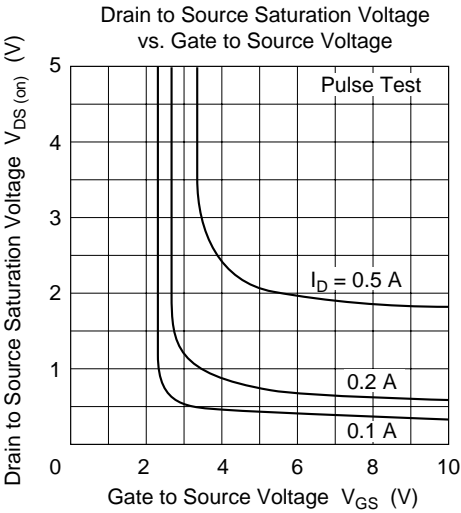
Note: 1. $PW \leq 10 \mu\text{s}$, duty cycle $\leq 1\%$

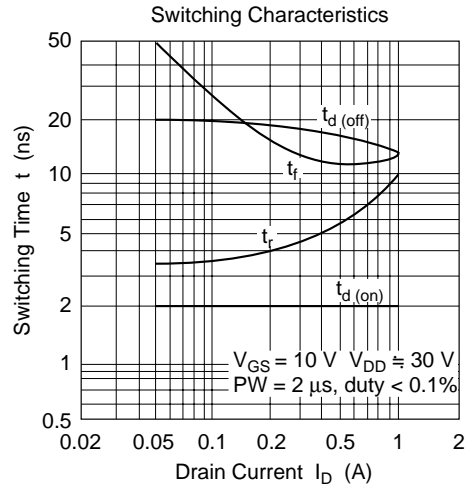
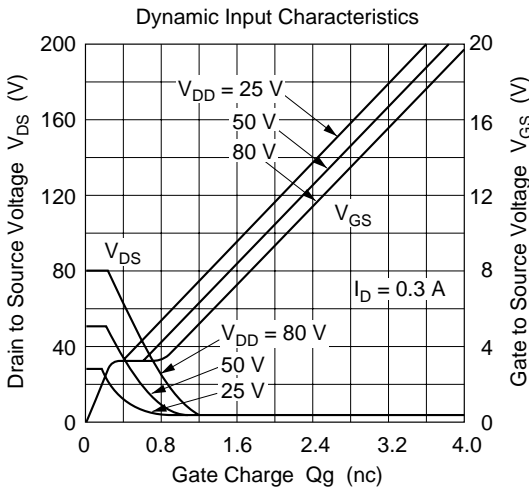
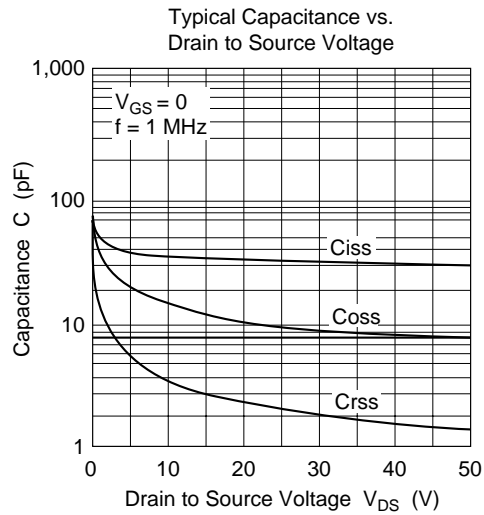
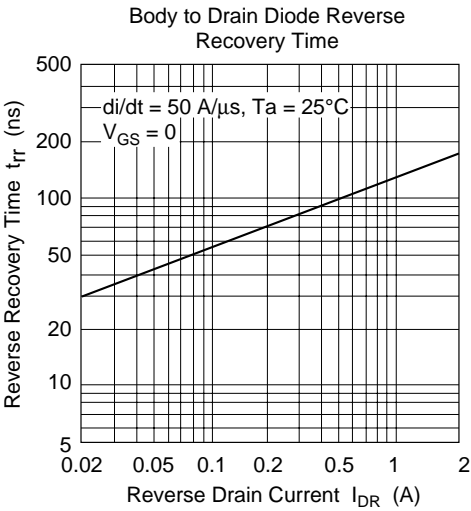
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

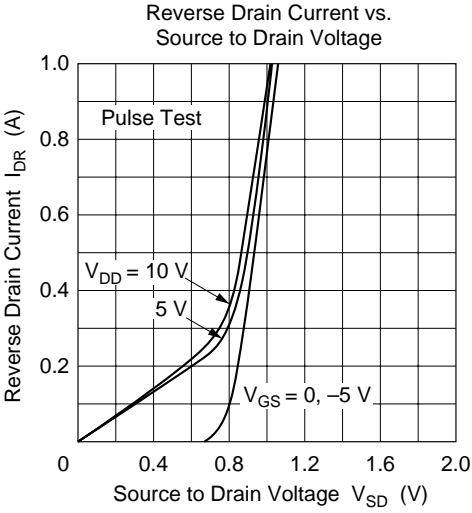
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(\text{BR})\text{DSS}}$	100	—	—	V	$I_{\text{D}} = 10 \text{ mA}$, $V_{\text{GS}} = 0$
Gate to source breakdown voltage	$V_{(\text{BR})\text{GSS}}$	± 20	—	—	V	$I_{\text{G}} = \pm 100 \mu\text{A}$, $V_{\text{DS}} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{\text{GS}} = \pm 16 \text{ V}$, $V_{\text{DS}} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	50	μA	$V_{\text{DS}} = 80 \text{ V}$, $V_{\text{GS}} = 0$
Gate to source cutoff voltage	$V_{\text{GS(off)}}$	1.0	—	2.0	V	$I_{\text{D}} = 1 \text{ mA}$, $V_{\text{DS}} = 10 \text{ V}$
Static drain to source on state resistance	$R_{\text{DS(on)}}$	—	3.5	4.5	Ω	$I_{\text{D}} = 0.2 \text{ A}$, $V_{\text{GS}} = 10 \text{ V}^{*1}$
		—	4.0	6.5	Ω	$I_{\text{D}} = 0.2 \text{ A}$, $V_{\text{GS}} = 4 \text{ V}^{*1}$
Forward transfer admittance	$ y_{\text{fs}} $	0.22	0.35	—	S	$I_{\text{D}} = 0.2 \text{ A}$, $V_{\text{DS}} = 10 \text{ V}^{*1}$
Input capacitance	Ciss	—	35	—	pF	$V_{\text{DS}} = 10 \text{ V}$, $V_{\text{GS}} = 0$,
Output capacitance	Coss	—	14	—	pF	$f = 1 \text{ MHz}$
Reverse transfer capacitance	Crss	—	3.5	—	pF	
Turn-on delay time	$t_{\text{d(on)}}$	—	2	—	ns	$I_{\text{D}} = 0.2 \text{ A}$, $V_{\text{GS}} = 10 \text{ V}$, $R_{\text{L}} = 150 \Omega$
Rise time	t_{r}	—	4	—	ns	
Turn-off delay time	$t_{\text{d(off)}}$	—	17	—	ns	
Fall time	t_{f}	—	15	—	ns	
Body to drain diode forward voltage	V_{DF}	—	0.9	—	V	$I_{\text{F}} = 0.3 \text{ A}$, $V_{\text{GS}} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	80	—	ns	$I_{\text{F}} = 0.3 \text{ A}$, $V_{\text{GS}} = 0$, $di_{\text{F}}/dt = 50 \text{ A}/\mu\text{s}$

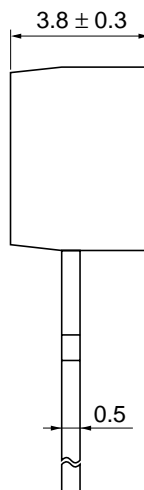
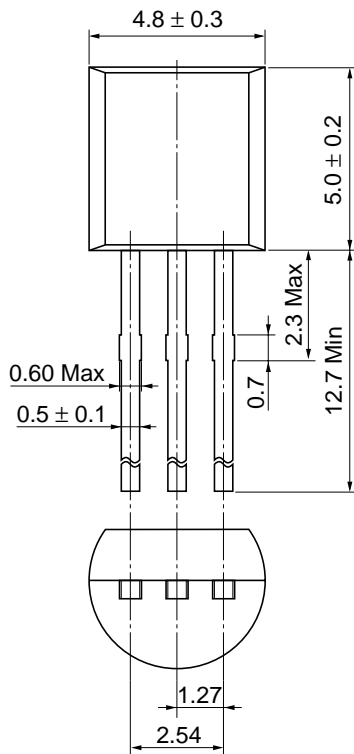
Note: 1. Pulse test











Hitachi Code	TO-92 (1)
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.25 g

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