

2SK1403, 2SK1403A

Silicon N-Channel MOS FET

HITACHI

ADE-208-1283 (Z)

1st. Edition

Mar. 2001

Application

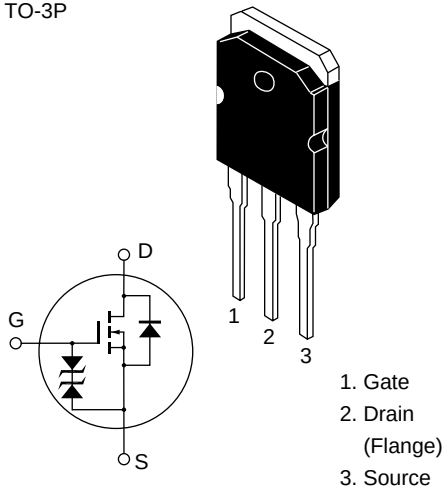
High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator and DC-DC converter

Outline

TO-3P



2SK1403, 2SK1403A

Absolute Maximum Ratings (Ta = 25°C)

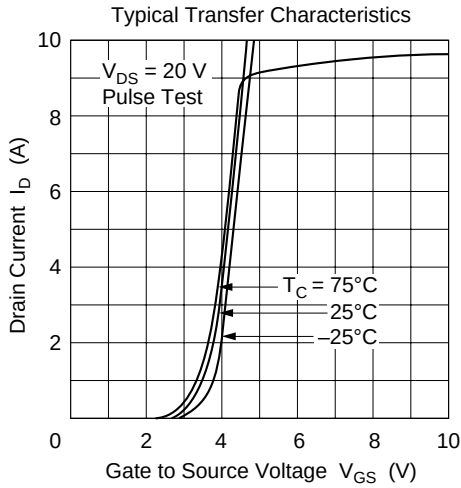
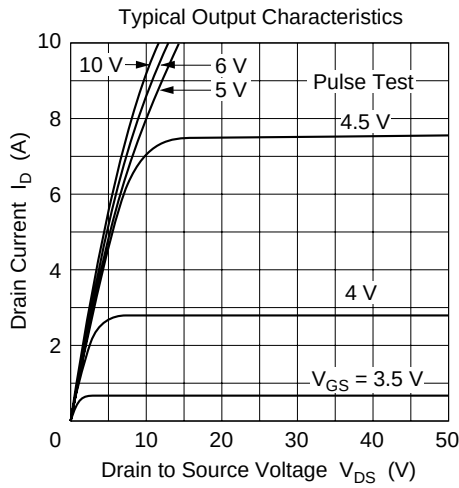
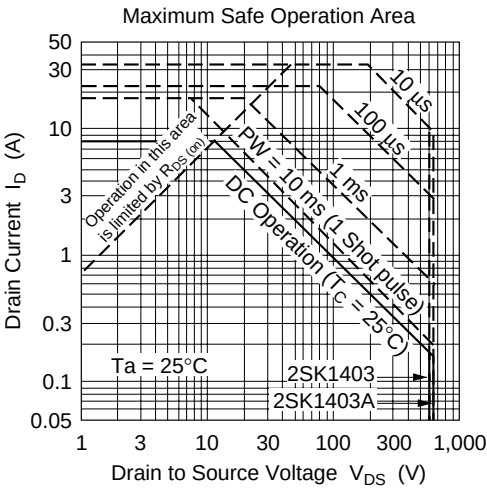
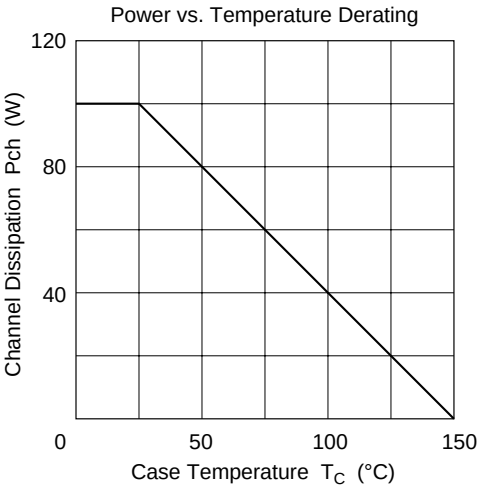
Item		Symbol	Ratings	Unit
Drain to source voltage	2SK1403	V_{DSS}	600	V
	2SK1403A		650	
Gate to source voltage		V_{GSS}	±30	V
Drain current		I_D	8	A
Drain peak current		$I_{D(pulse)}^{*1}$	32	A
Body to drain diode reverse drain current		I_{DR}	8	A
Channel dissipation		Pch^{*2}	100	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	−55 to +150	°C

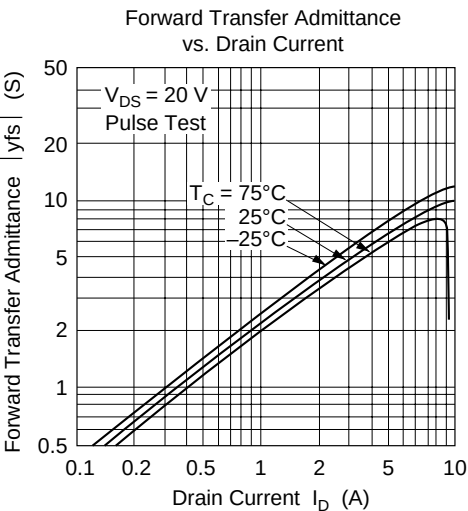
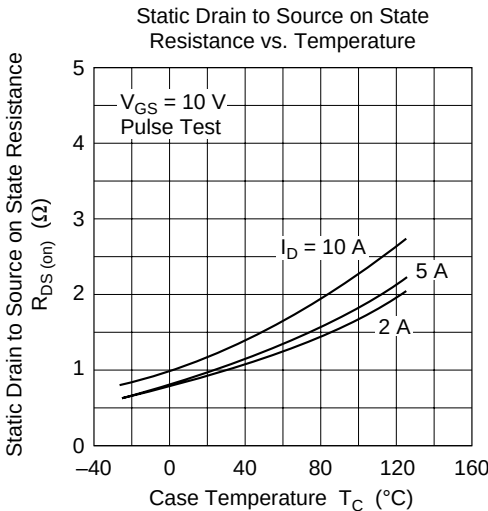
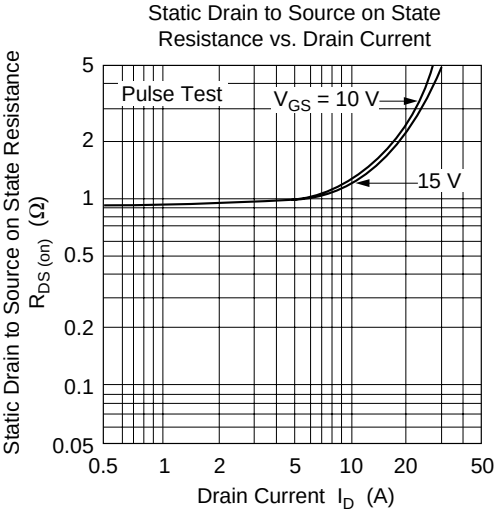
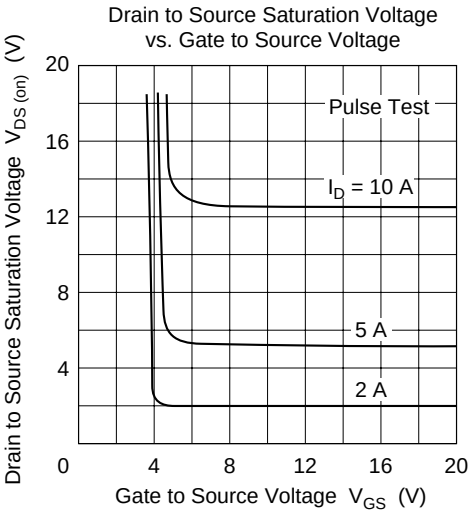
Notes: 1. PW 10 μs, duty cycle 1%
2. Value at Tc = 25°C

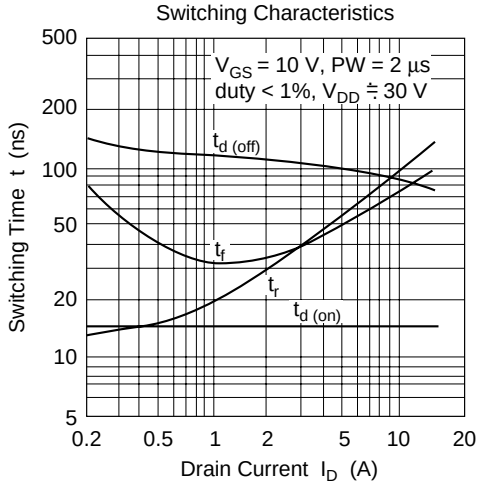
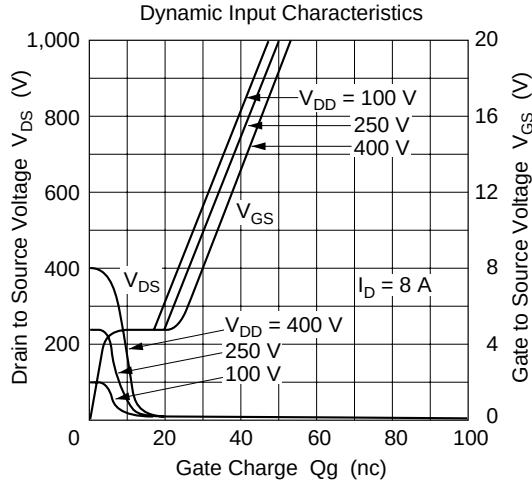
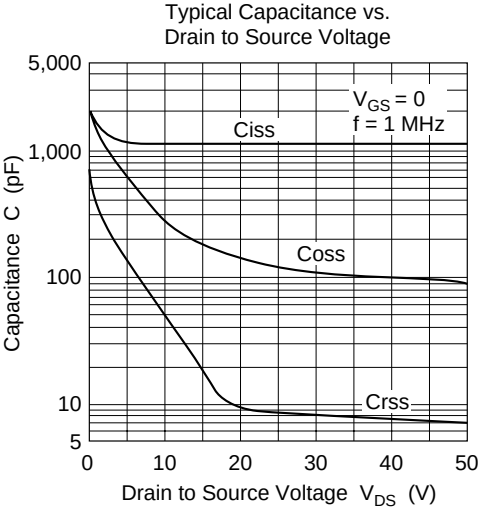
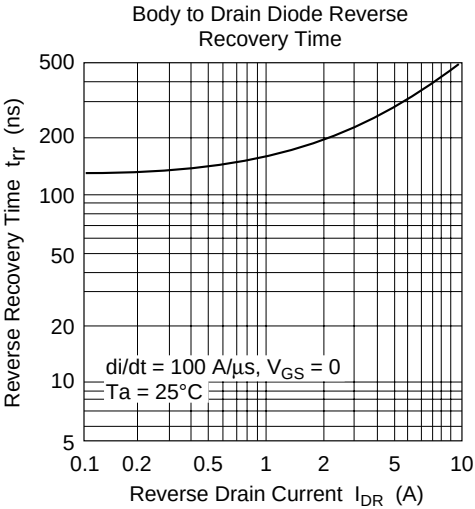
Electrical Characteristics (Ta = 25°C)

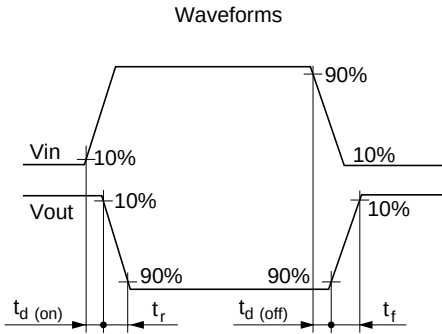
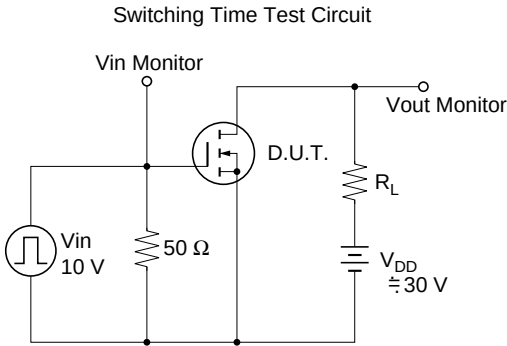
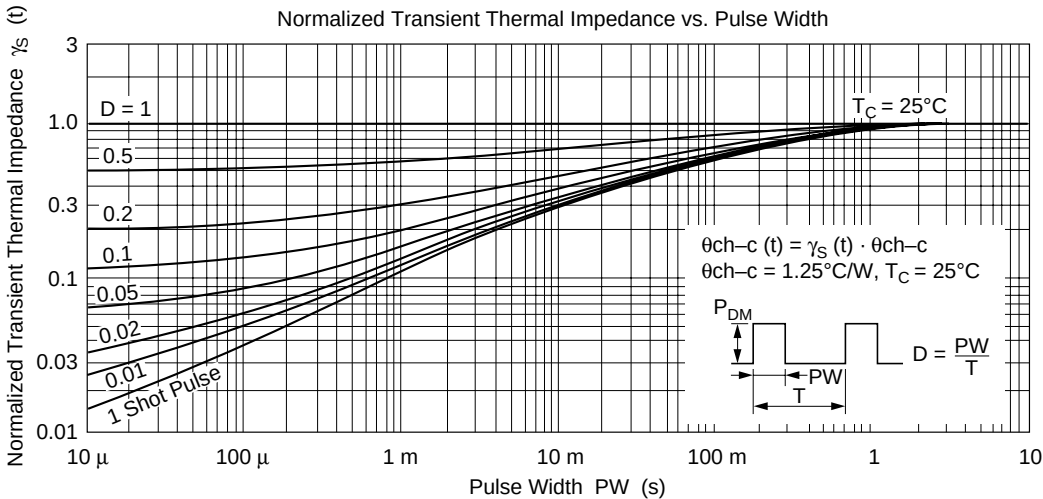
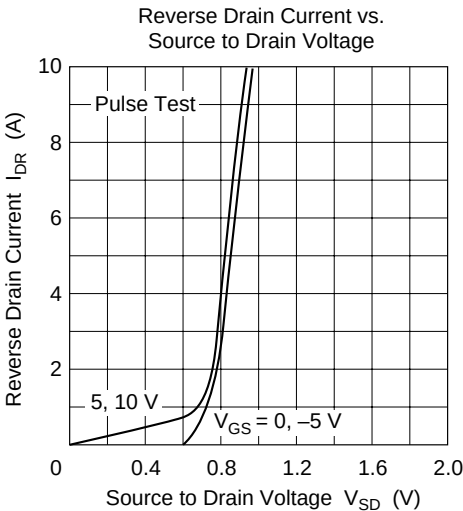
Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	K1403 K1403A	$V_{(BR)DSS}$	600 650	— —	— —	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage		$V_{(BR)GSS}$	±30	—	—	V	$I_G = \pm 100 \text{ } \mu\text{A}$, $V_{DS} = 0$
Gate to source leak current		I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 25 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	K1403 K1403A	I_{DSS}	—	—	250	μA	$V_{DS} = 500 \text{ V}$, $V_{GS} = 0$ $V_{DS} = 550 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage		$V_{GS(off)}$	2.0	—	3.0	V	$I_D = 1 \text{ mA}$, $V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	K1403 K1403A	$R_{DS(on)}$	— —	0.9 1.0	1.3 1.4		$I_D = 4 \text{ A}$, $V_{GS} = 10 \text{ V}^{*1}$
Forward transfer admittance		$ y_{fs} $	4.0	6.5	—	S	$I_D = 4 \text{ A}$, $V_{DS} = 10 \text{ V}^{*1}$
Input capacitance		C_{iss}	—	1180	—	pF	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$,
Output capacitance		C_{oss}	—	265	—	pF	$f = 1 \text{ MHz}$
Reverse transfer capacitance		C_{rss}	—	50	—	pF	
Turn-on delay time		$t_{d(on)}$	—	15	—	ns	$I_D = 4 \text{ A}$, $V_{GS} = 10 \text{ V}$,
Rise time		t_r	—	50	—	ns	$R_L = 7.5$
Turn-off delay time		$t_{d(off)}$	—	105	—	ns	
Fall time		t_f	—	45	—	ns	
Body to drain diode forward voltage		V_{DF}	—	0.95	—	V	$I_F = 8 \text{ A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time		t_{rr}	—	420	—	ns	$I_F = 8 \text{ A}$, $V_{GS} = 0$, $di_F/dt = 100 \text{ A}/\mu\text{s}$

Note: 1. Pulse test

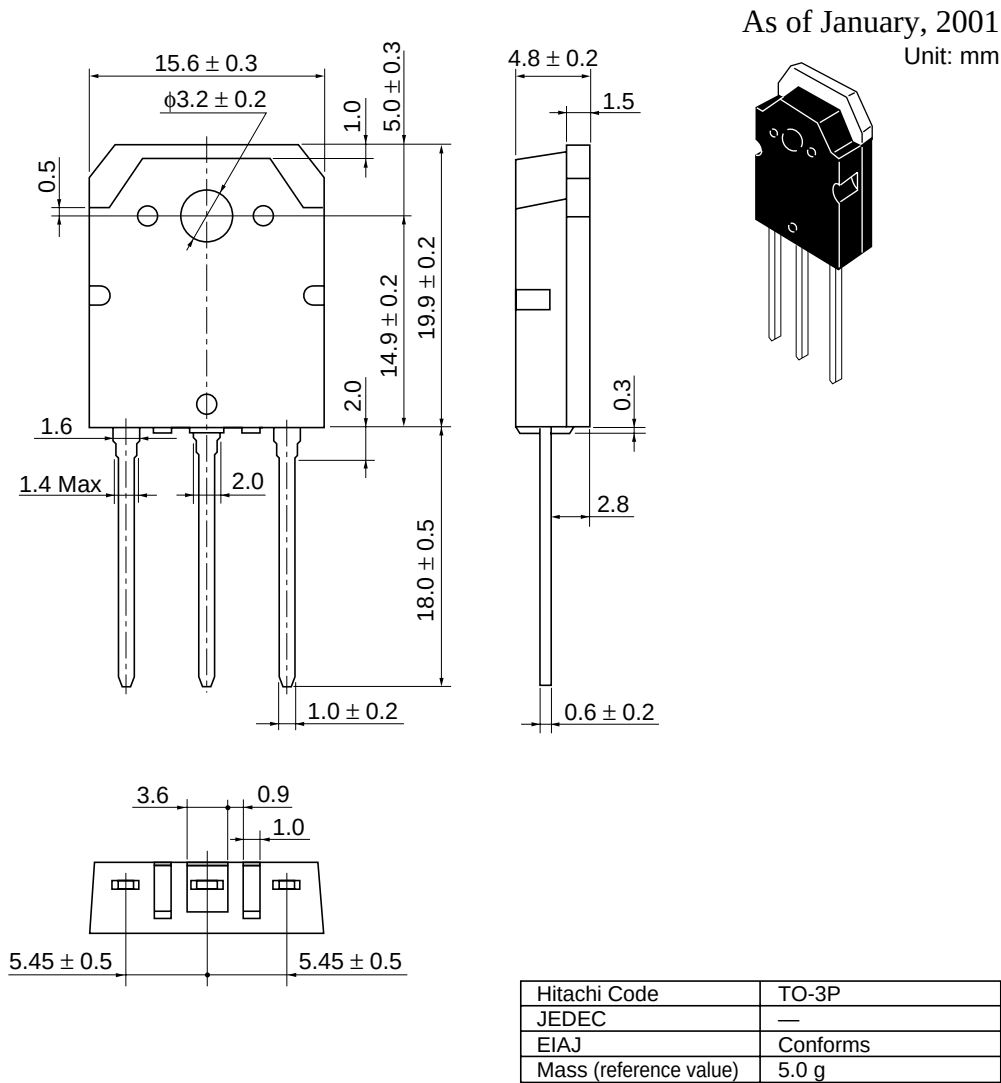








Package Dimensions



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