# 2SJ443

Silicon P-Channel MOS FET

## HITACHI

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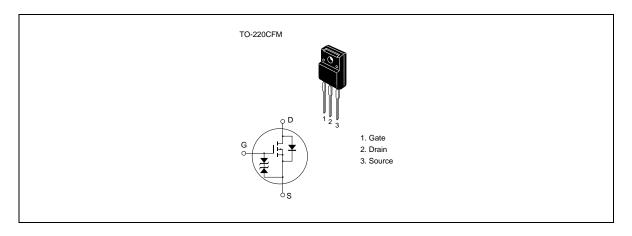
#### Application

High speed power switching

#### Features

- Low on-resistance
- High speed switching
- Low drive current
- 4 V Gate drive can be driven from 5 V source
- Suitable for Switching regulator, DC DC converter

#### Outline



### 2SJ443

### **Absolute Maximum Ratings** ( $Ta = 25^{\circ}C$ )

Item	Symbol	Ratings	Unit	
Drain to source voltage	V <sub>DSS</sub>	-60	V	
Gate to source voltage	V <sub>gss</sub>	±20	V	
Drain current	I <sub>D</sub>	-10	А	
Drain peak current	+1 D(pulse)	-40	А	
Body to drain diode reverse drain current	l <sub>dr</sub>	-10	А	
Channel dissipation	Pch* <sup>2</sup>	25	W	
Channel temperature	Tch	150	°C	
Storage temperature	Tstg	-55 to +150	°C	

Notes 1.  $PW \le 10 \ \mu s$ , duty cycle  $\le 1\%$ 

2. Value at Tc = 25°C

### **Electrical Characteristics** (Ta = 25°C)

Item	Symbol	Min	Тур	Мах	Unit	Test conditions
Drain to source breakdown voltage	$V_{\scriptscriptstyle (BR)DSS}$	-60	_	_	V	$I_{_{D}} = -10 \text{ mA}, V_{_{GS}} = 0$
Gate to source breakdown voltage	$V_{\scriptscriptstyle (BR)GSS}$	±20	_	_	V	$I_{g} = \pm 100 \ \mu A, \ V_{DS} = 0$
Gate to source leak current	I <sub>GSS</sub>	_	_	±10	μA	$V_{gs} = \pm 16 V, V_{ds} = 0$
Zero gate voltage drain current	I <sub>DSS</sub>	_	—	-250	μA	$V_{\rm DS} = -50 \text{ V},  V_{\rm GS} = 0$
Gate to source cutoff voltage	$V_{\rm GS(off)}$	-1.0	—	-2.0	V	$I_{_{D}} = -1 \text{ mA}, V_{_{DS}} = -10 \text{ V}$
Static drain to source on state resistance	${\sf R}_{\rm DS(on)}$	_	0.13	0.18	Ω	$I_{_{D}} = -5A$ $V_{_{GS}} = -10 V^{*1}$
		_	0.18	0.25	Ω	$I_{_{D}} = -5A$ $V_{_{GS}} = -4 V^{*1}$
Forward transfer admittance	y <sub>fs</sub>	4.0	6.5	_	S	$I_{_{D}} = -5A$ $V_{_{DS}} = -10 \text{ V}^{*1}$
Input capacitance	Ciss	_	900	_	pF	$V_{\rm DS} = -10 \ V$
Output capacitance	Coss	_	460	_	pF	$V_{gs} = 0$
Reverse transfer capacitance	Crss	_	130		рF	f = 1 MHz
Turn-on delay time	t <sub>d(on)</sub>		8	_	ns	$I_{D} = -5A$
Rise time	t,		65	_	ns	$V_{gs} = -10 V$
Turn-off delay time	$t_{d(off)}$		170	_	ns	$R_{L} = 6 \Omega$
Fall time	t,	_	105	_	ns	_
Body to drain diode forward voltage	$V_{DF}$	—	-1.1	—	V	$I_{_{\rm F}} = -10A, \ V_{_{\rm GS}} = 0$
Body to drain diode reverse recovery time	t <sub>rr</sub>	_	200	_	ns	$I_F = -10 \text{ A}, V_{GS} = 0,$ diF/dt = 50 A/µs
Nata 1 Dulas Test						

Note 1. Pulse Test

See characteristic curves of 2SJ172, 2SJ175

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