

100V N-Channel Trench FET Power MOSFET

MAIN CHARACTERISTICS

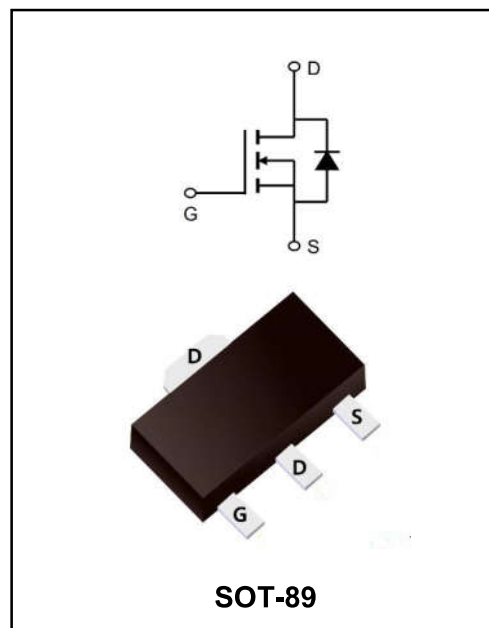
I_D	10A
V_{DS}	100V
$R_{DS(on)-typ}(@V_{GS}=10V)$	<85mΩ(Typ:74mΩ)
$R_{DS(on)-typ}(@V_{GS}=4.5V)$	<115mΩ(Typ:90mΩ)

FEATURES

- ◆Trench FET Power MOSFET
- ◆This Device is Pb-Free and Halogen Free
- ◆DC/DC Converter.

MECHANICAL DATA

- ◆Case: SOT-89
- ◆Epoxy UL: 94V-0.
- ◆Mounting Position: Any.



Marking Code

YFW10N10SI	10N10
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Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	10	A
Power Dissipation	P_D	2.5	W
Junction Temperature	T_J	-55—150	°C
Storage Temperature	T_{STG}	-55—150	°C
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	50	°C/W

Note: The $R_{\theta JA}$ is the sum of the thermal resistance from junction to ambient and depend on package type

Electrical Characteristics

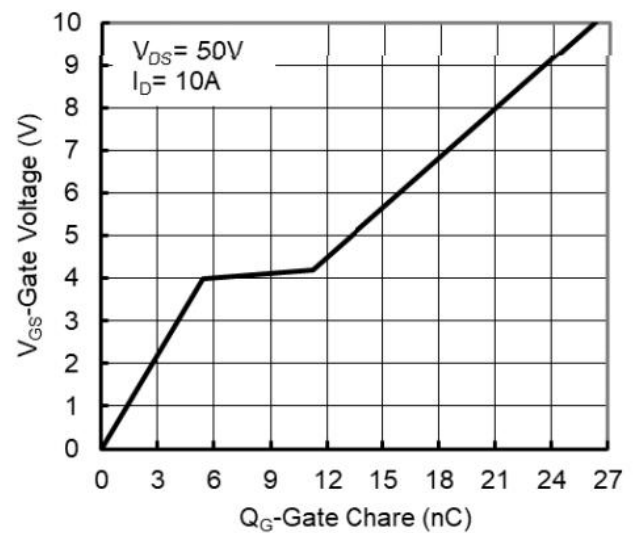
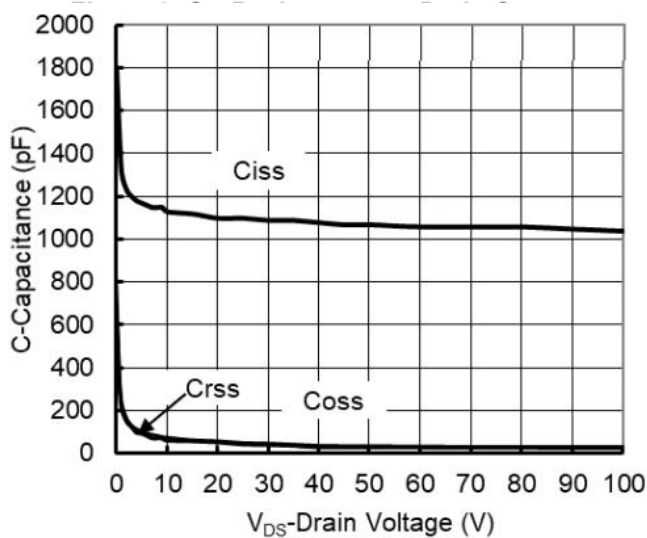
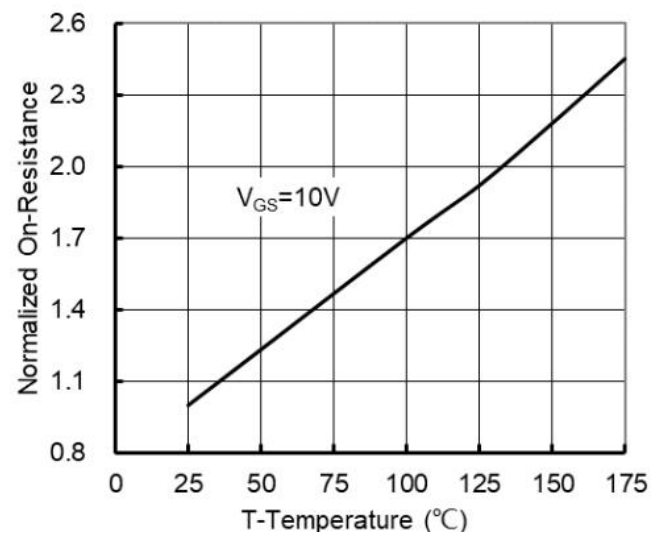
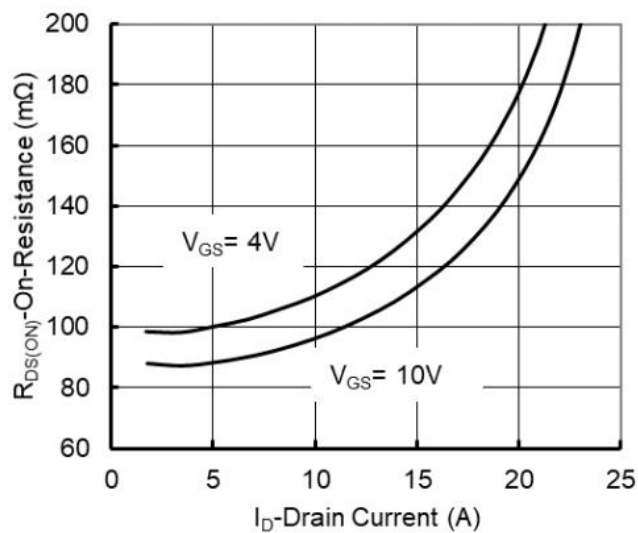
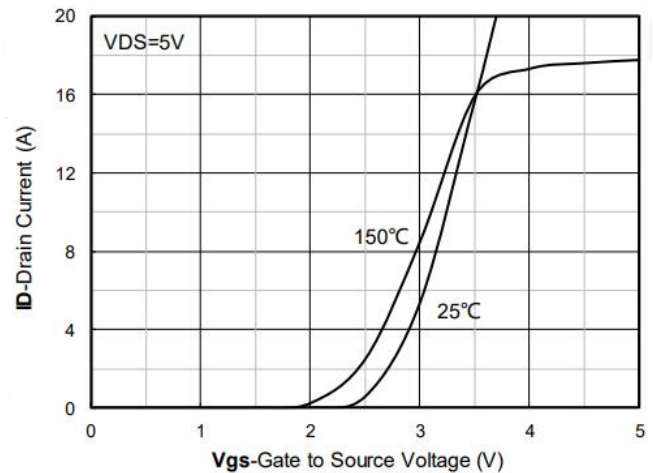
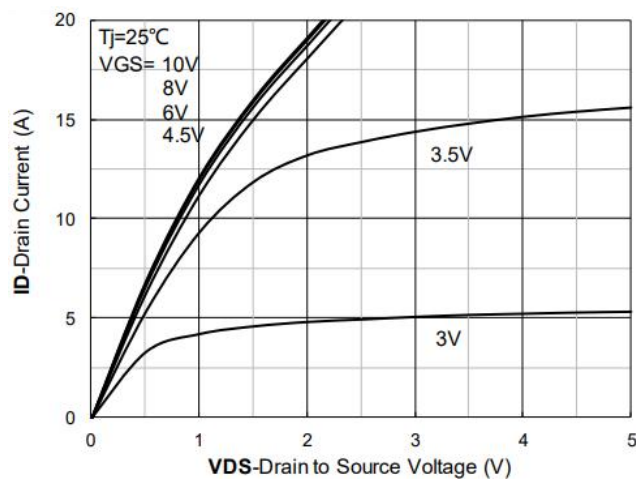
(Ratings at 25°C ambient temperature unless otherwise specified).

Parameter	Test Condition	Symbols	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	100			V
Gate-Threshold voltage*	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	1.2	1.8	2.5	V
Gate-body Leakage	$V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS}			± 100	nA
Zero Gate Voltage Drain current	$V_{DS}=40V, V_{GS}=0V$	I_{DSS}			1	μA
Drain-Source On-Resistance (a)	$V_{GS}=10V, I_D=3A$	$R_{DS(on)}$		74	85	m Ω
	$V_{GS}=4.5V, I_D=2A$			90	115	
Input capacitance	$V_{DS}=50V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}		1070		pF
Output capacitance		C_{oss}		33		
Reverse Transfer capacitance		C_{rss}		30		
Total gate charge	$V_{DS}=50V$ $V_{GS}=10V$ $I_D=3A$	Q_G		26		nC
Gate-source charge		Q_{GS}		5.4		
Gate-drain charge		Q_{GD}		5.8		
Turn-on Time	$V_{DD}=50V$ $I_D=3A$ $V_{GS}=10V$ $R_G=3\Omega$	$t_{d(ON)}$		7		ns
Rise time		t_r		24		
Turn-off Time		$t_{d(OFF)}$		24		
Fall time		t_f		31		
Diode Forward current		I_S			3	A
Diode Forward voltage	$I_S=3A, V_{GS}=0V$	V_{SD}			1.2	V

Notes: a. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

b. These parameters have no way to verify.

Typical characteristics



Ordering information

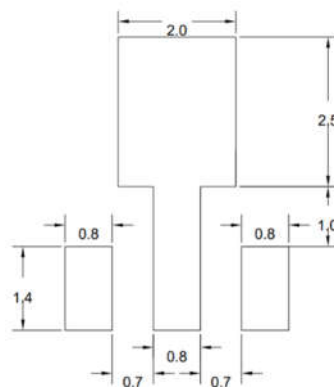
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-89

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

The recommended mounting pad size



UNIT:MM

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