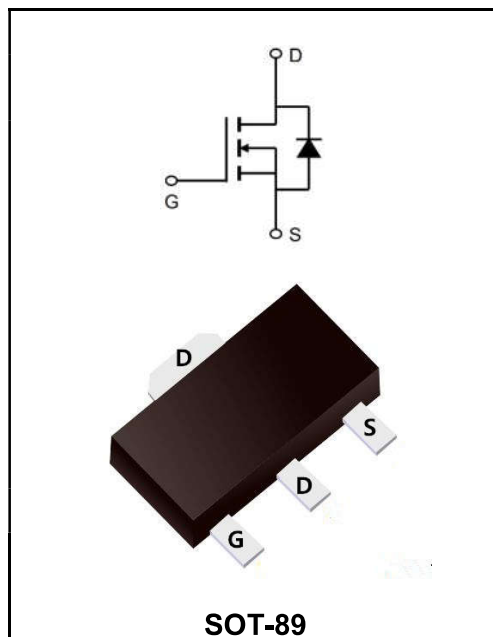


60V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	8.5A
V_{DS}	60V
$R_{DS(on)-typ}(@V_{GS}=10V)$	< 35mΩ (Typ:28 mΩ)



Application

- ◆ Battery protection
- ◆ Load switch
- ◆ Uninterruptible power supply

Marking Code

YFW8N06SI

YFW 8N06

Maximum Ratings at $T_c=25^{\circ}\text{C}$ unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	60	V
Gate - Source Voltage	V_{GS}	± 20	V
Continuous Drain Current, $V_{GS} @ 10V^1$ @ $T_A=25^{\circ}\text{C}$	I_D	8.5	A
Continuous Drain Current, $V_{GS} @ 10V^1$ @ $T_A=70^{\circ}\text{C}$	I_D	5.8	A
Pulsed Drain Current ²	I_{DM}	14.6	A
Single Pulse Avalanche Energy ³	E_{AS}	21.5	mJ
Avalanche Current	I_{AS}	20.6	A
Total Power Dissipation ⁴ @ $T_A=25^{\circ}\text{C}$	P_D	1.2	W
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$
Operating Junction Temperature Range	T_J	-55 to +150	$^{\circ}\text{C}$
Thermal Resistance Junction-ambient ¹	$R_{\theta JA}$	62.5	$^{\circ}\text{C/W}$
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	36	$^{\circ}\text{C/W}$

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	V(BR)DSS	60	65	-	V
Zero Gate Voltage Drain Current	V _{DS} =60V , V _{GS} =0V	I _{DSS}	-	-	1.0	μA
Gate to Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	I _{GSS}	-	-	±100	nA
Gate -Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	V _{GS(th)}	1.0	1.6	2.5	V
Static Drain-Source on-Resistance note3	V _{GS} =10V, I _D =10A	R _{DS(ON)}	-	28	40	mΩ
	V _{GS} =4.5V, I _D =5A		-	33	45	
Input Capacitance	V _{DS} =25V V _{GS} =0V f=1.0MHz	C _{iss}	-	1148	-	pF
Output Capacitance		C _{oss}	-	58.5	-	
Reverse Transfer Capacitance		C _{rss}	-	49.4	-	
Total Gate Charge	V _{DS} =30V V _{GS} =10V I _D =10A	Q _g	-	20.3	-	nC
Gate-Source Charge		Q _{gs}	-	3.7	-	
Gate-Drain(“Miller”) Charge		Q _{gd}	-	5.3	-	
Turn-on delay time	V _{DS} =30V I _D =20A R _{G_} =1.8Ω V _{GS} =10V	t _{d(on)}	-	7.6	-	ns
Turn-on Rise Time		T _r	-	20	-	
Turn-Off Delay Time		t _{d(OFF)}	-	15	-	
Turn-Off Fall Time		t _f	-	24	-	
Maximum Continuous Drain to Source Diode Forward Current		I _S	-	-	20	A
Maximum Pulsed Drain to Source Diode Forward Current		I _{SM}	-	-	80	A
Drain to Source Diode Forward Voltage	V _{GS} =0V , I _S =20A	V _{SD}	-	-	1.2	V
Body Diode Reverse Recovery Time	I _F =20A,dI/dt=100A /μs	t _{rr}	-	29	-	ns
Body Diode Reverse Recovery Charge		Q _{rr}	-	43	-	nC

Notes:

- 1、 Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
- 2、 EAS condition : T J =25℃, V DD =30V, V G =10V, L=0.5mH, Rg=25Ω, IAS =3.5A
- 3、 Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Ratings and Characteristic Curves

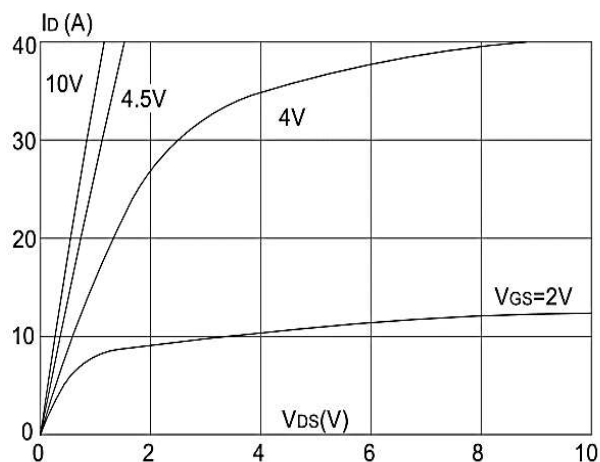


Figure1: Output Characteristics

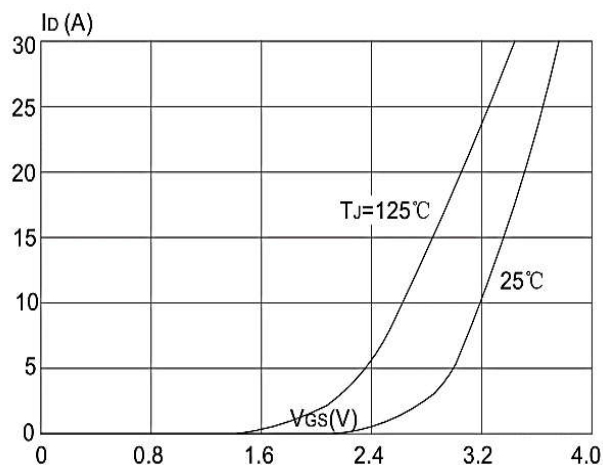


Figure 2: Typical Transfer Characteristics

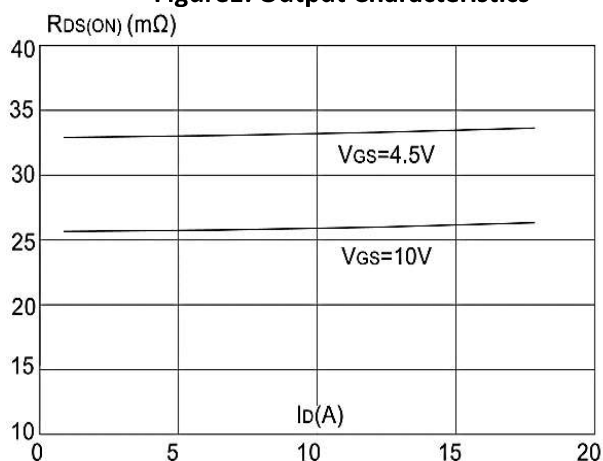


Figure 3: On-resistance vs. Drain Current

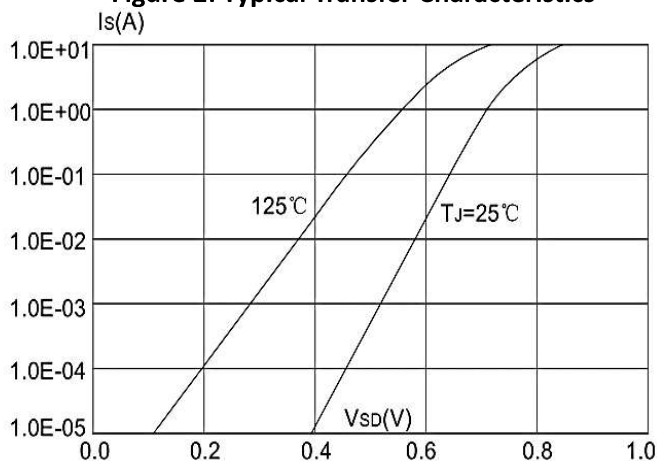


Figure 4: Body Diode Characteristics

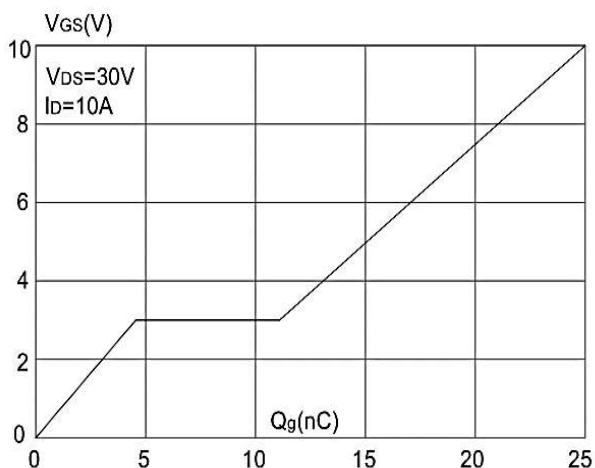


Figure 5: Gate Charge Characteristics

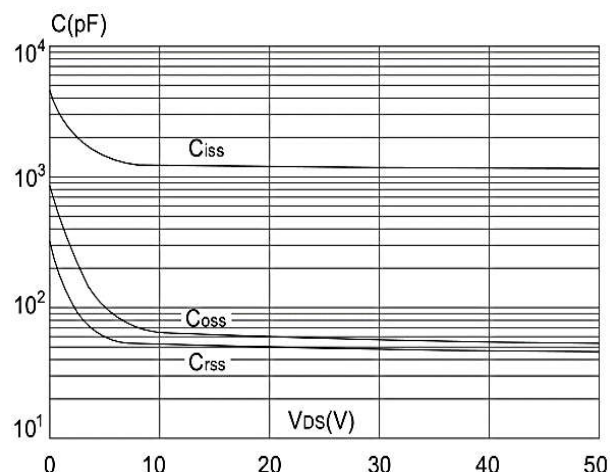


Figure 6: Capacitance Characteristics

Ratings and Characteristic Curves

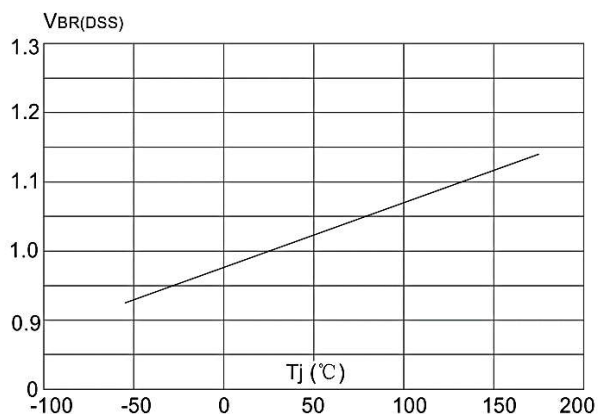


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

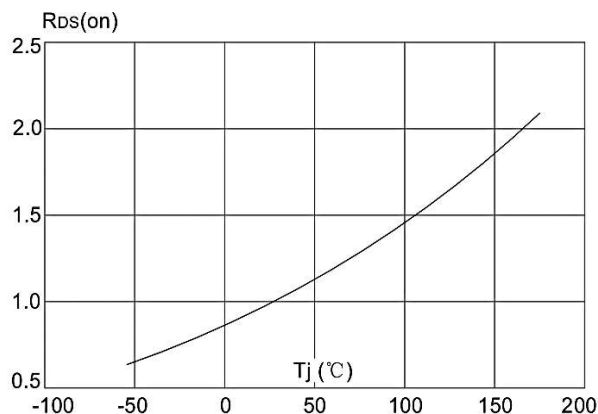


Figure 8: Normalized on Resistance vs. Junction Temperature

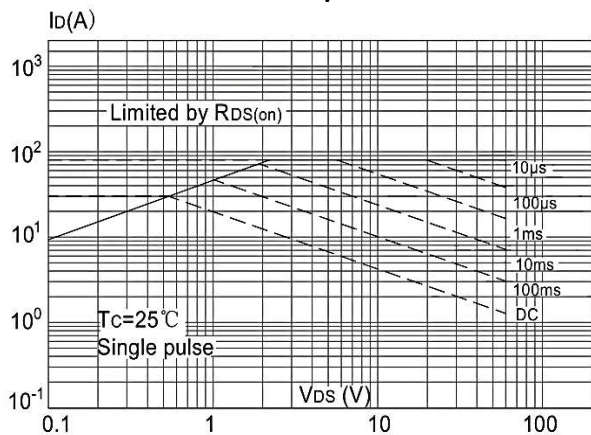


Figure 9: Maximum Safe Operating Area vs. Case Temperature

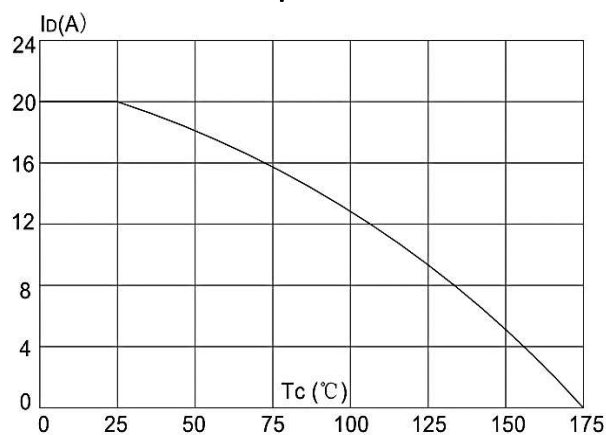


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

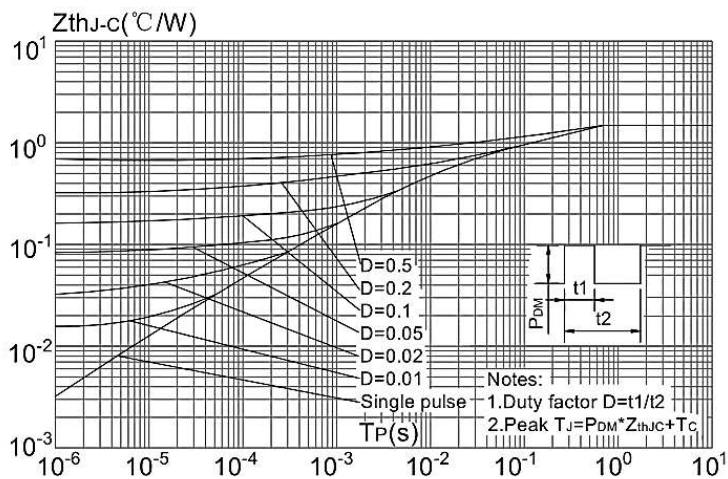


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

Ordering information

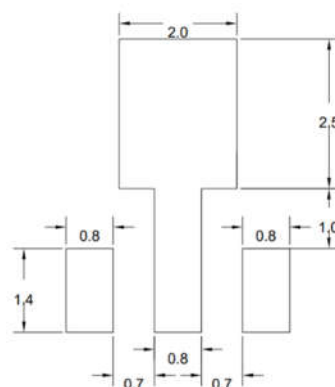
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

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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