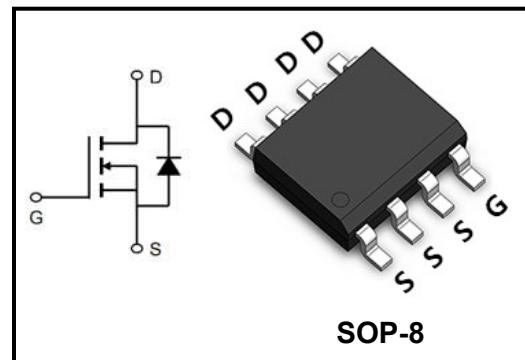


150V N-CHANNEL MOSFET FOR SWITCHING

MAIN CHARACTERISTICS

I_D	5A
V_{DS}	150V
$R_{DS(on)-typ}(@V_{GS}=10V)$	$<60m\Omega$ (Typ: 55 mΩ)



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	150	V
Gate - Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	5	A
Pulsed Drain Current ($T_C=100^\circ\text{C}$)	I_D	4.0	A
Pulsed Drain Current	I_{DM}	42	A
Power Dissipation	P_D	3.5	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$
Thermal Resistance, Junction ambient	$R_{\theta JA}$	35.7	$^\circ\text{C/W}$

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

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DS}	150	170	-	V
Zero Gate Voltage Drain Current	$V_{DS}=150V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Gate Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	± 100	nA
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	2.0	3.2	4.0	V
Drain-Source on-Resistance	$V_{GS}=10V, I_D=5.2A$	$R_{DS(on)}$	-	55	60	mΩ
Forward Transconductance	$V_{DS}=50V, I_D=5.2A$	g_{fs}	12	-	-	S
Input Capacitance	$V_{DS}=25V$ $V_{GS}=0V$ $F=1.0MHz$	C_{iss}	-	1700	-	pF
Output Capacitance		C_{oss}	-	190	-	
Reverse Transfer Capacitance		C_{rss}	-	90	-	
Turn-on delay time	$V_{DD}=75V$ $I_D=3.1A$ $V_{GS}=10V$ $R_{GEN}=6.5\Omega$	$t_{d(on)}$	-	15	-	ns
Rise Time		T_r	-	13	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	26	-	
Fall Time		t_f	-	14	-	
Total Gate Charge	$V_{DS}=75V$ $V_{GS}=10V$ $I_D=3.1A$	Q_g	-	35.8	-	nC
Gate-Source Charge		Q_{gs}	-	7.5	-	
Gate-Drain Charge		Q_{gd}	-	13	-	
Diode Forward Voltage	$V_{GS}=0V, I_S=3.1A$	V_{SD}	-	-	1.2	V
Diode Forward Current		I_S	-	-	2.7	A
Reverse Recovery Time	$T_J=25^\circ\text{C}, I_F=3.1A$ $di/dt=100A/\mu s$	trr		50	-	nS
Reverse Recovery Charge		Q_{rr}	-	140	-	nC

Typical Electrical and Thermal Characteristics (Curves)

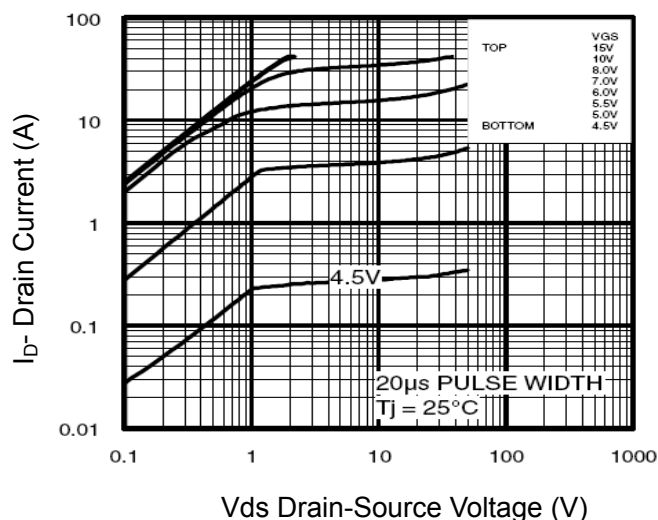


Figure 1 Output Characteristics

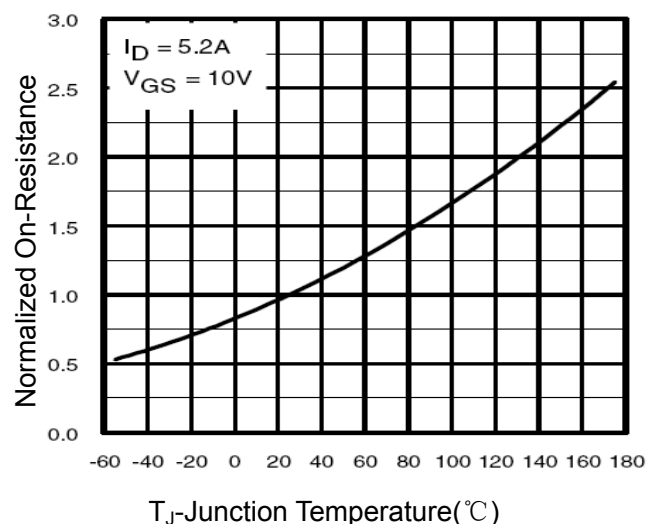


Figure 4 $R_{DS(on)}$ -Junction Temperature

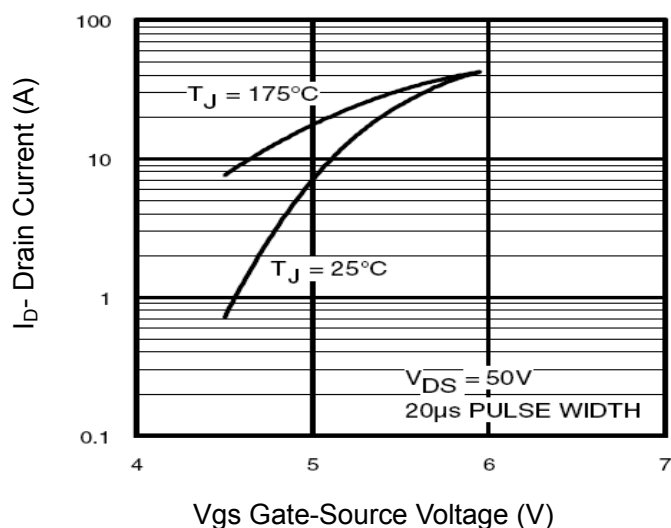


Figure 2 Transfer Characteristics

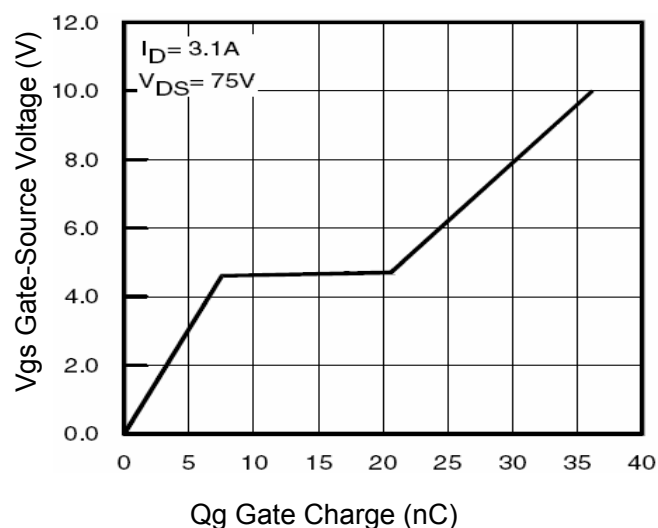


Figure 5 Gate Charge

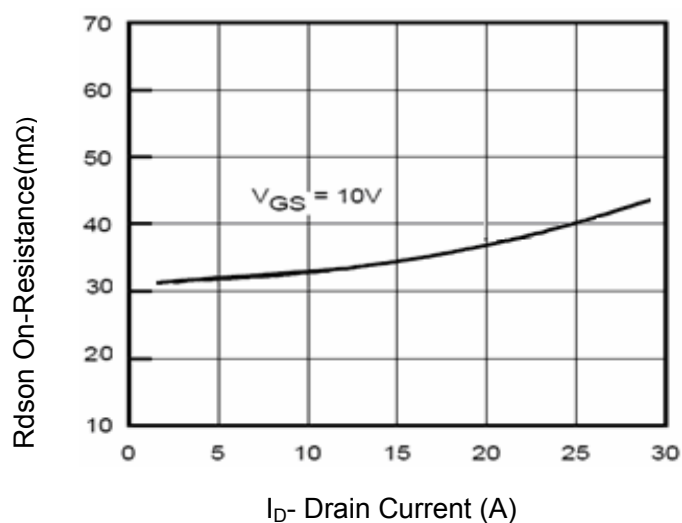


Figure 3 $R_{DS(on)}$ - Drain Current

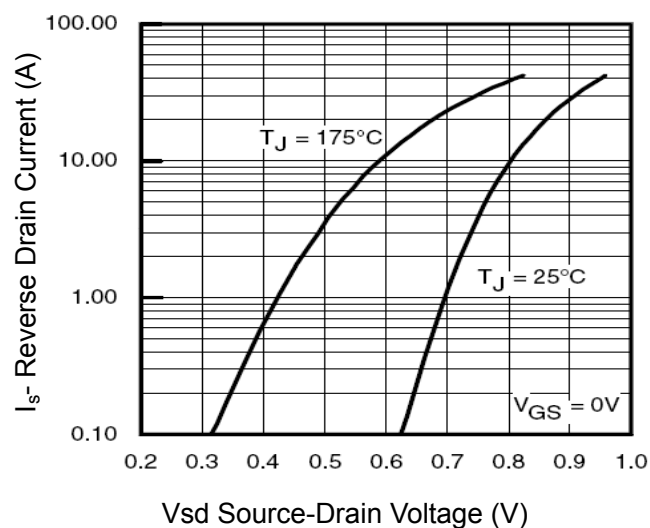
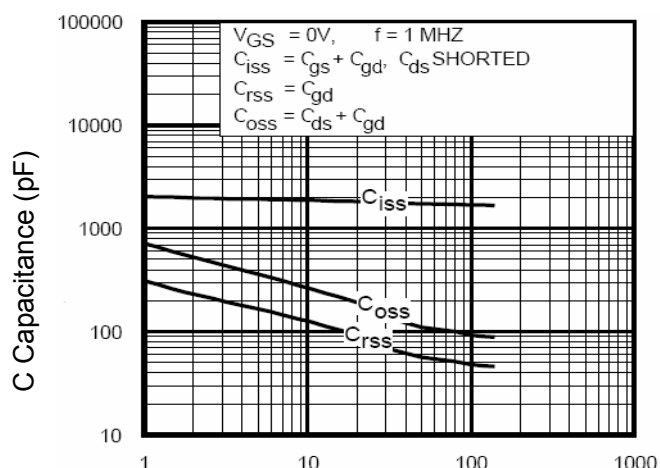
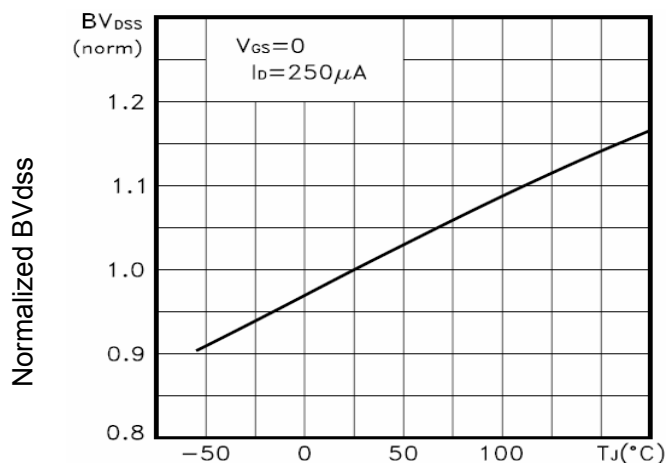


Figure 6 Source- Drain Diode Forward

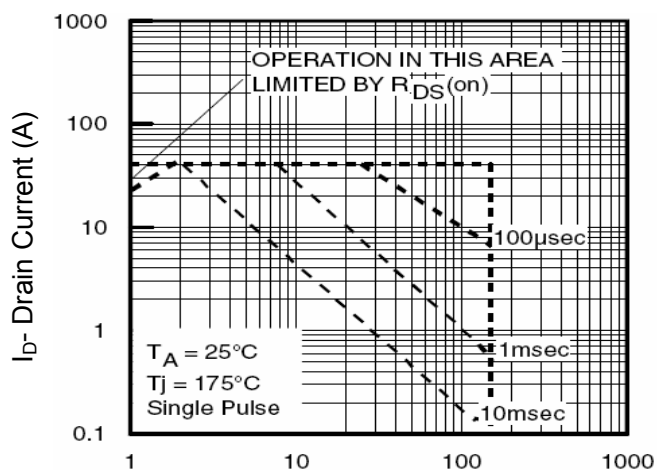
Typical Electrical and Thermal Characteristics (Curves)



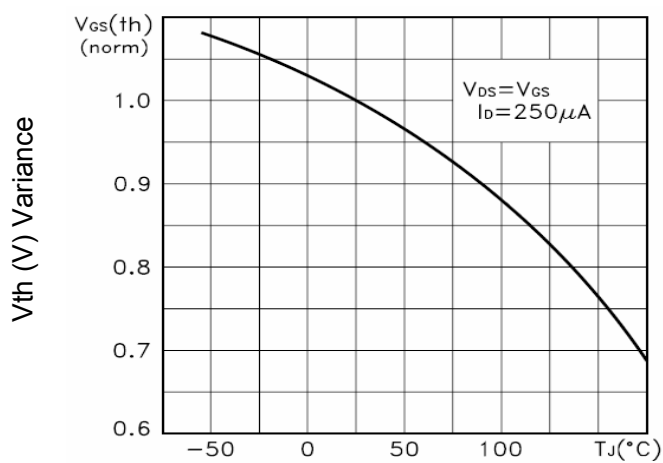
Vds Drain-Source Voltage (V)
Figure 7 Capacitance vs Vds



TJ-Junction Temperature(°C)
Figure 9 BV_{DSS} vs Junction Temperature



Vds Drain-Source Voltage (V)
Figure 8 Safe Operation Area



TJ-Junction Temperature(°C)
Figure 10 V_{GS(th)} vs Junction Temperature

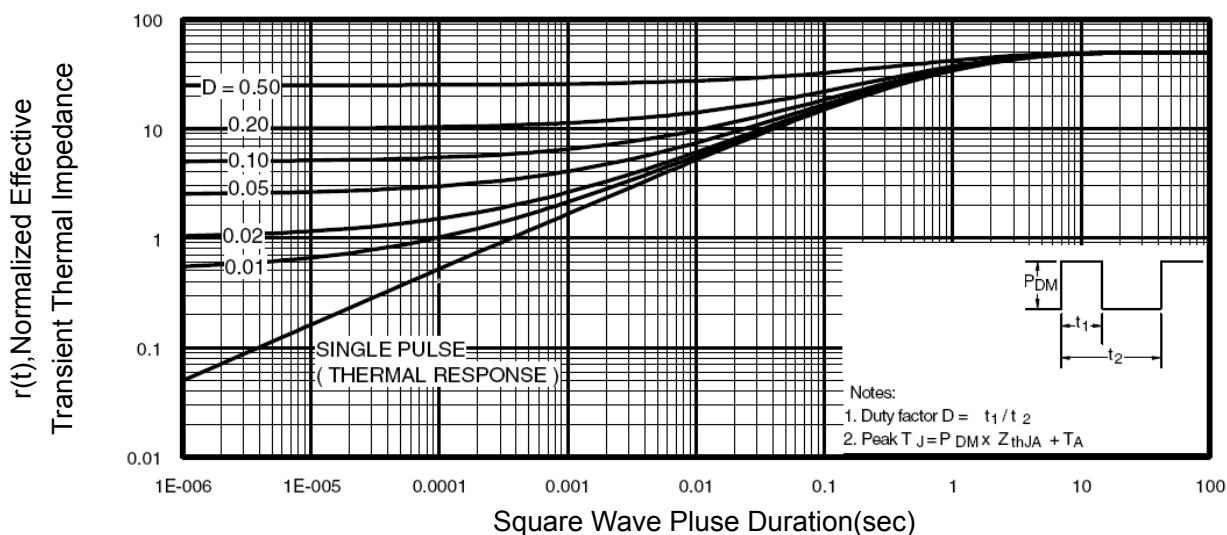
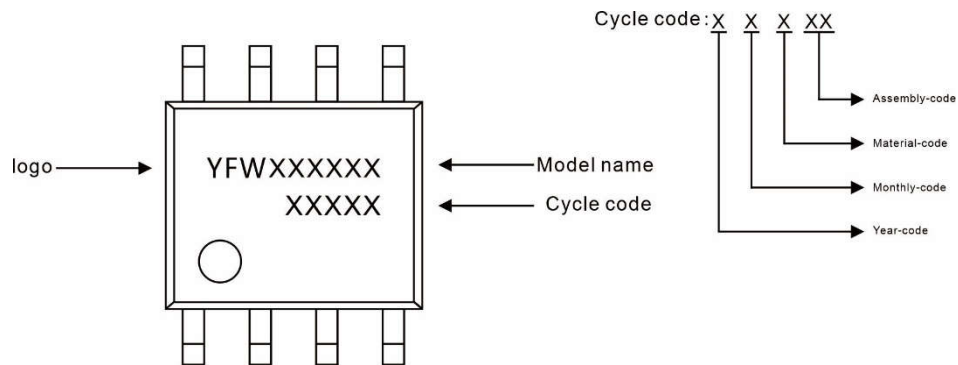


Figure 11 Normalized Maximum Transient Thermal Impedance

Marking Diagram



Ordering information

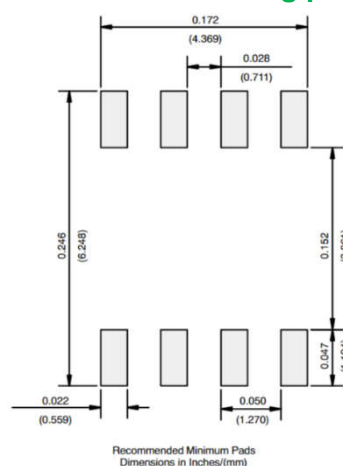
Package	Packing Description	Packing Quantity
SOP-8	Tape/Reel, 13" reel	3000PCS/Reel 30000PCS/Carton

Package Dimensions

SOP-8

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.35	1.75	0.053	0.069
A1	0.10	0.25	0.004	0.010
A2	1.35	1.50	0.053	0.059
b	0.35	0.55	0.014	0.022
c	0.15	0.25	0.006	0.010
D	4.80	5.00	0.189	0.197
D1	3.10	3.50	0.122	0.138
E	5.80	6.20	0.228	0.244
E1	3.80	4.00	0.150	0.157
E2	2.20	2.60	0.087	0.102
e	1.27 (BSC)		0.050 (BSC)	
L	0.40	1.27	0.016	0.050
θ	0°	8°	0°	8°

The recommended mounting pad size



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