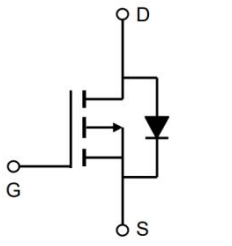
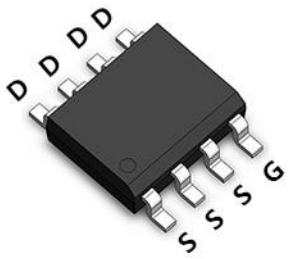
-60V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-12A
V_{DS}	-60V
R_{DSON}-typ(@V_{GS}=-10V)	＜33mΩ(Typ:28mΩ)
R_{DSON}-typ(@V_{GS}=-4.5V)	＜47mΩ(Typ:42mΩ)





SOP-8

FEATURES

- 100% UIS+ Rg Tested
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

APPLICATION

- DC/DC Converter.
- Power Management.
- Load Switch.
- For Motor Drive Application.

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Characteristics		Symbols	Value	Units
Drain-Source Voltage		V_{DS}	-60	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25℃	I_D	-12	A
Continuous Drain Current	T_A=70℃	I_D	-8.5	A
Pulsed Drain Current [1]	T_C=25℃	I_{DM}	-22.5	A
Diode Continuous Forward Current	T_A=25℃	I_S	-1 2	A
Total Power Dissipation	T_A=25℃	P_D	1.56	W
Total Power Dissipation	T_A=70℃	P_D	1	W
Avalanche Current, Single pulse [3]	L=0.5mH	I_{AS}	-17	A
Avalanche Energy Single Pulse [3]	L=0.5mH	E_{AS}	72	mJ
Operating Junction Temperature Range		T_J	150	°C
Storage Temperature Range		T_{STG}	-55 to +150	°C
Thermal Resistance Junction-Ambient [2]		$R_{\theta JA}$	80	°C/W

Note :
1.Pulse width limited by max. junction temperature.
2.Surface Mounted on 1in² pad area.
3.UIS tested and pulse width limited by maximum junction temperature 150°C (initial temperature Tj=25°C).

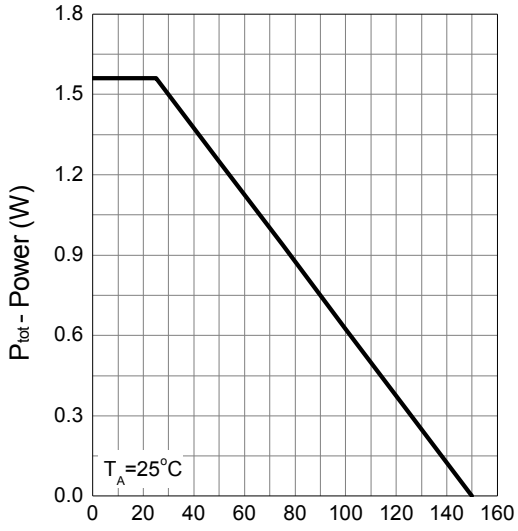
Electrical Characteristics (T_C=25℃unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250μA	BV_{DSS}	-60			V
Drain-Source Leakage Current	V_{DS}=-48V , V_{GS}=0V , T_J=25℃	I_{DSS}			-1	μA
	V_{DS}=-48V , V_{GS}=0V , T_J=85℃				-30	
Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250μA	$V_{GS(th)}$	-1.0	-1.8	-2.5	V
Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	I_{GSS}			±100	nA
Static Drain-Source On-Resistance [1]	V_{GS}=-10V , I_D=-12A	$R_{DS(ON)}$		28	33	mΩ
	V_{GS}=-4.5V , I_D=-8A			42	47	
Gate Resistance [2]	V_{DS}=0V , V_{GS}=0V , f=1MHz	R_g		8	16	Ω
Input Capacitance[2]	V_{DS}=-30V V_{GS}=0V f=1MHz	C_{iss}		1416	1840	pF
Output Capacitance[2]		C_{oss}		142		
Reverse Transfer Capacitance[2]		C_{rss}		85		
Turn-On Delay Time[2]	V_{DD}=-15V I_{DS}=-1A, V_{GEN}=10V, R_G=3.3Ω	$t_{d(on)}$		10	18	ns
Turn-On Rise Time[2]		T_r		9	16	
Turn-Off Delay Time[2]		$t_{d(OFF)}$		88	158	
Turn-Off Fall Time[2]		t_f		42	76	
Total Gate Charge [2]	V_{DS}=-20V, V_{GS}=-4.5V, I_{DS}=-12A	Q_g		15.6		nC
Total Gate Charge [2]	V_{DS}=-20V V_{GS}=-4.5V I_D=- 12A	Q_g		32	45	
Gate-Source Charge[2]		Q_{gs}		5.2		
Gate-Drain Charge[2]		Q_{gd}		6.8		
Diode Forward Voltage[1]	V_{GS}=0V , I_S=-1A	V_{SD}		-0.7	-1.1	V
Reverse Recovery Time	I_{SD}=-4A, dI_{SD}/dt=100A/ms	t_{rr}		26		ns
Reverse Recovery Charge		Q_{rr}		33		nC

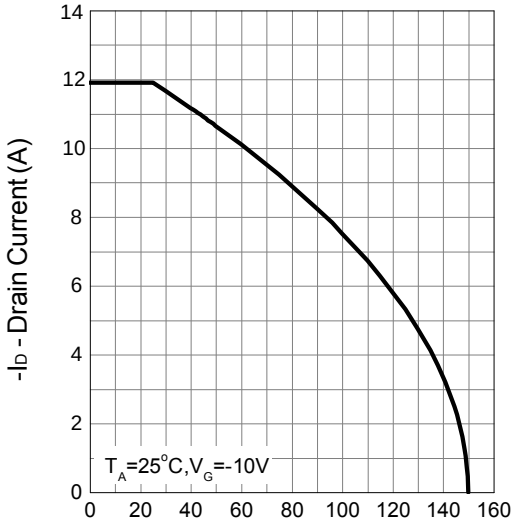
Note :
1.Pulse test; pulse width≦300μs, duty cycle≦2%.
2.Guaranteed by design, not subject to production testing.

Typical Characteristics

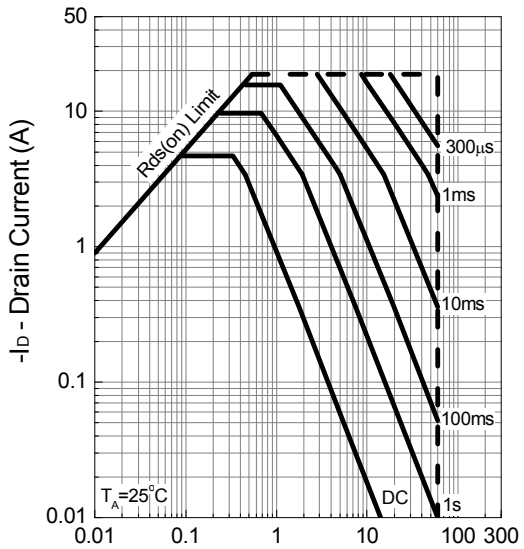
Power Dissipation



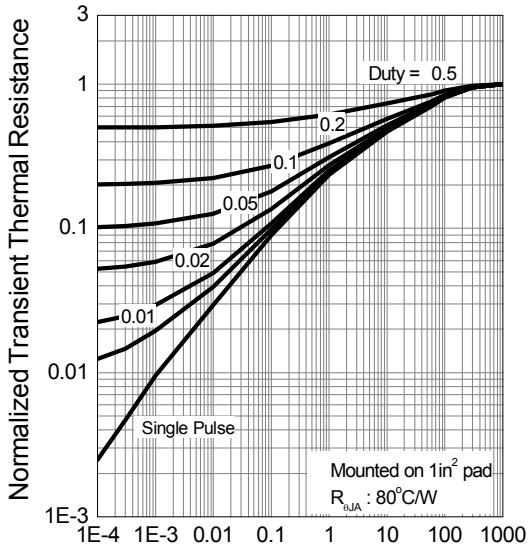
Drain Current



Safe Operation Area

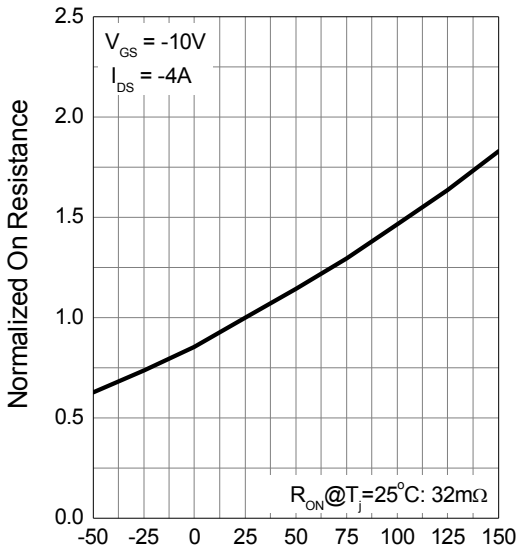


Thermal Transient Impedance

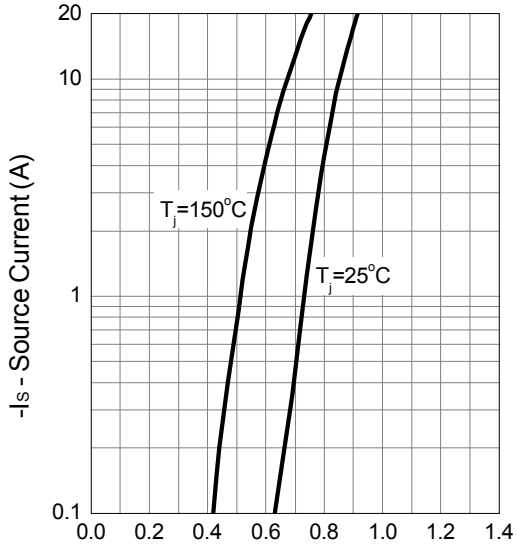


Typical Characteristics

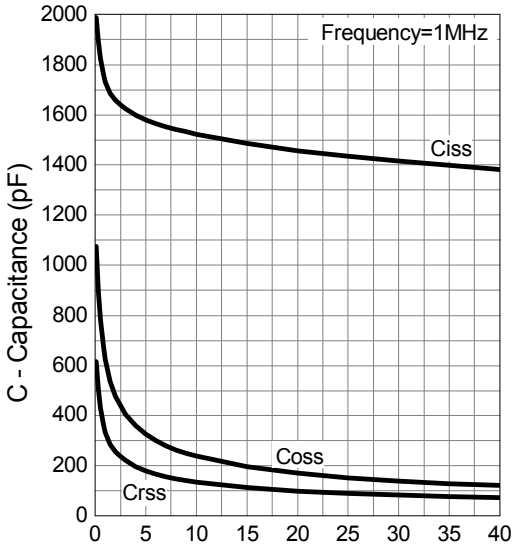
Drain-Source On Resistance



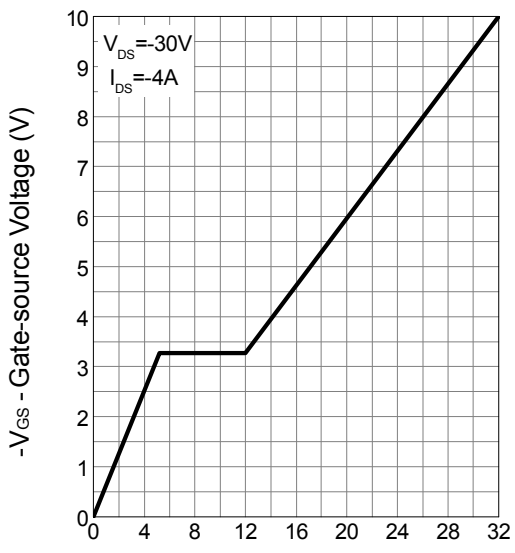
Source-Drain Diode Forward



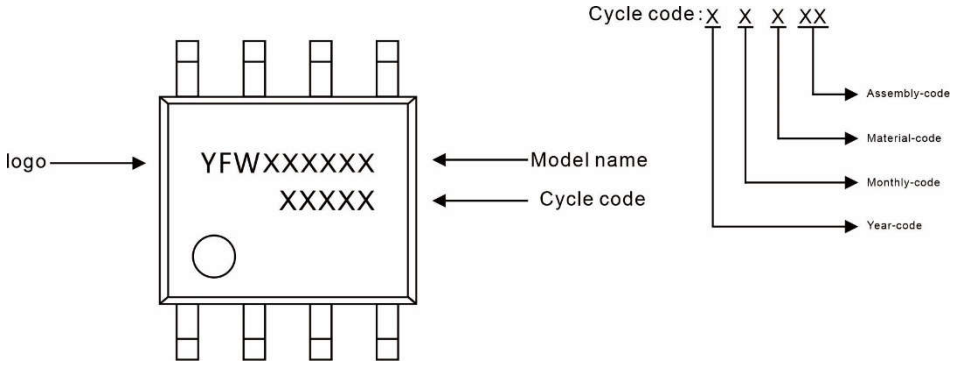
Capacitance



Gate Charge



Marking Diagram

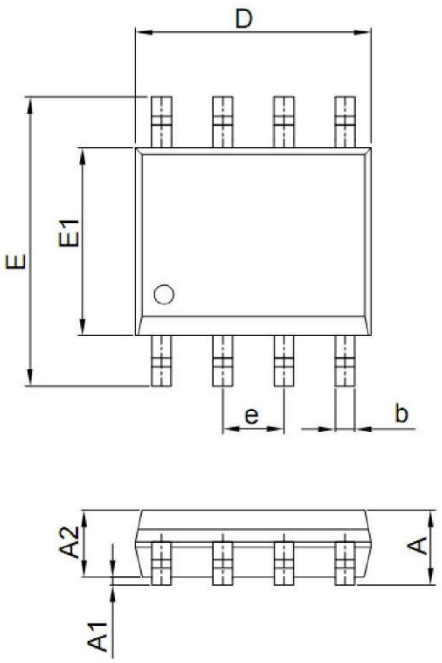


Ordering information

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

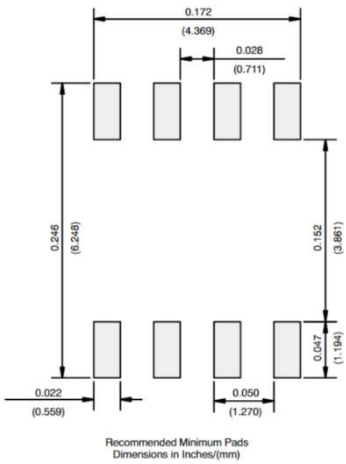
Package Dimensions

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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