
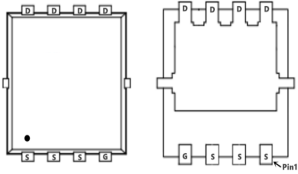
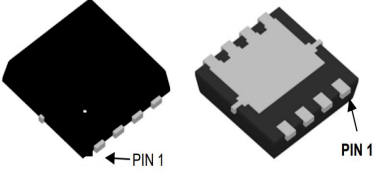
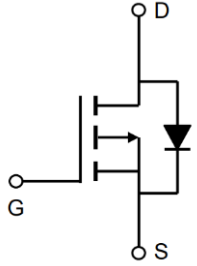


**TM30P06NF****P-Channel Enhancement Mosfet**

General Description <ul style="list-style-type: none"> • Low $R_{DS(ON)}$ • RoHS and Halogen-Free Compliant Applications <ul style="list-style-type: none"> • Load switch • PWM 		General Features <p>$V_{DS} = -60V$ $I_D = -30A$</p> <p>$R_{DS(ON)} = 24m\Omega$ (typ.) @ $V_{GS} = -10V$</p> <p>100% UIS Tested 100% R_g Tested</p> 		
 <p>Marking:30P06</p>		<p>NF:DFN5x6-8L</p>  		
Absolute Maximum Ratings ($T_A = 25^\circ C$ Unless Otherwise Noted)				
Symbol	Parameter	Limit	Unit	
V_{DS}	Drain-Source Voltage ($V_{GS} = 0V$)	-60	V	
V_{GS}	Gate-Source Voltage ($V_{DS} = 0V$)	± 20	V	
I_D	Drain Current-Continuous ($T_C = 25^\circ C$)	-30	A	
	Drain Current-Continuous ($T_C = 100^\circ C$)	-19	A	
I_{DM} (pluse)	Drain Current-Continuous@ Current-Pulsed (Note 1)	-94	A	
P_D	Maximum Power Dissipation ($T_C = 25^\circ C$)	79	W	
	Maximum Power Dissipation ($T_C = 100^\circ C$)	39.5	W	
E_{AS}	Avalanche energy (Note 2)	196	mJ	
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 To 175	$^\circ C$	
Thermal Data				
Symbol	Parameter	Typ	Max	Unit
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case		1.9	$^\circ C/W$



TM30P06NF

P-Channel Enhancement Mosfet

Electrical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

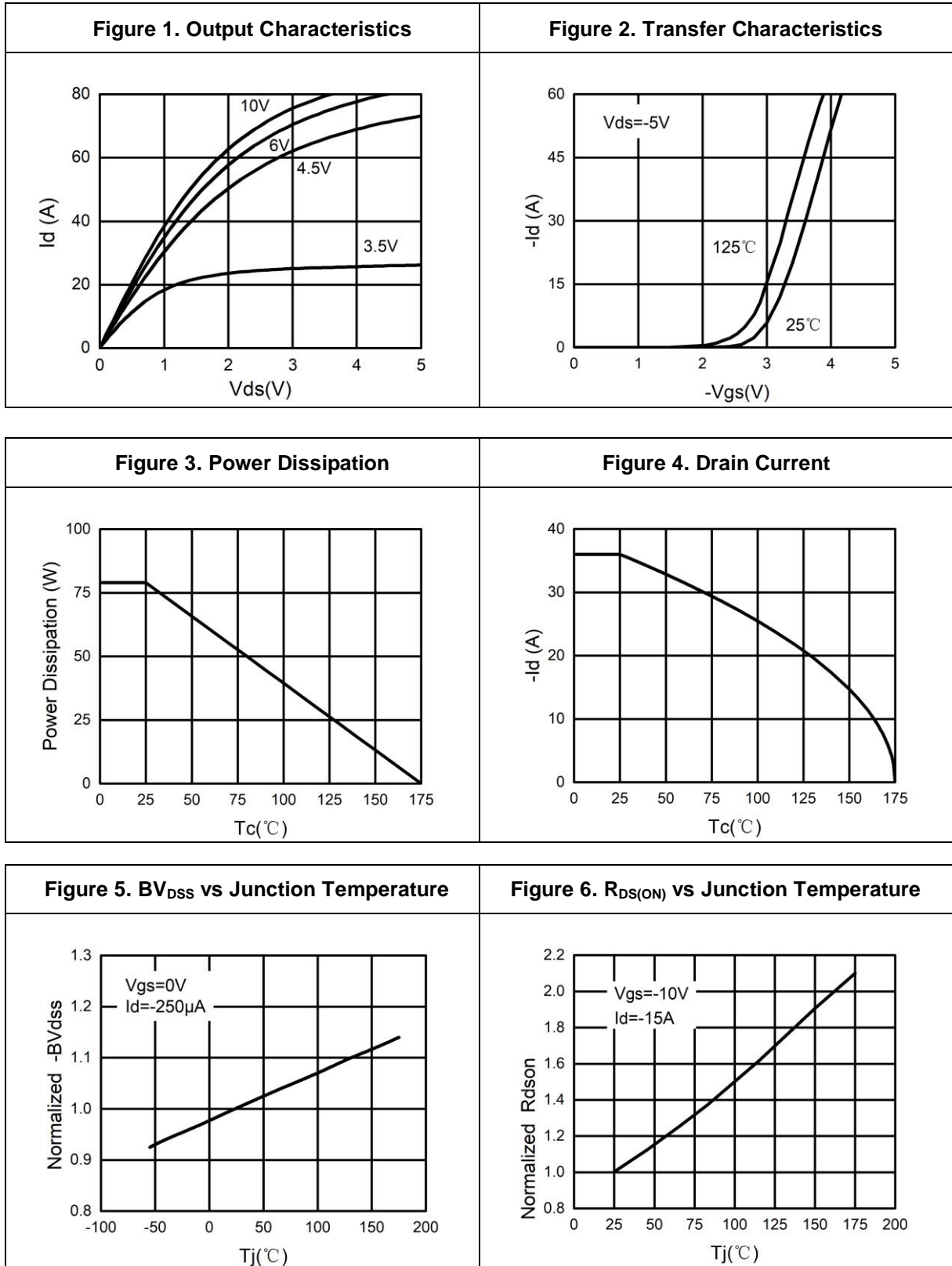
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-60			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-60V, V_{GS}=0V$			-1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.8	-2.5	V
g_{FS}	Forward Transconductance	$V_{DS}=-5V, I_D=-15A$		35		S
$R_{DS(ON)}$	Drain-Source On-State Resistance	$V_{GS}=-10V, I_D=-15A$		24	29	$m\Omega$
		$V_{GS}=-4.5V, I_D=-10A$		30	40	$m\Omega$
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=-25V, V_{GS}=0V,$ $f=1.0MHz$		2026		pF
C_{oss}	Output Capacitance			134		pF
C_{rss}	Reverse Transfer Capacitance			98		pF
Switching Parameters						
$t_{d(on)}$	Turn-on Delay Time	$V_{GS}=-10V, V_{DS}=-30V,$ $R_L=1.5\Omega, R_{GEN}=3\Omega$		12.2		nS
t_r	Turn-on Rise Time			10		nS
$t_{d(off)}$	Turn-Off Delay Time			64		nS
t_f	Turn-Off Fall Time			14		nS
Q_g	Total Gate Charge	$V_{GS}=-10V, V_{DS}=-30V, I_D=-20A$		68		nC
Q_{gs}	Gate-Source Charge			10.5		nC
Q_{gd}	Gate-Drain Charge			13		nC
Source-Drain Diode Characteristics						
I_{SD}	Source-Drain Current (Body Diode)				30	A
V_{SD}	Forward on Voltage (Note 3)	$V_{GS}=0V, I_S=-15A$			-1.2	V
t_{rr}	Reverse Recovery Time	$I_F=-20A, di/dt=100A/\mu s$		26		ns
Q_{rr}	Reverse Recovery Charge	$I_F=-20A, di/dt=100A/\mu s$		29		nC

Notes 1.Repetitive Rating: Pulse width limited by maximum junction temperature.

Notes 2. E_{AS} condition: $T_J=25^\circ\text{C}, V_{DD}=40V, V_G=-10V, R_g=25\Omega, L=0.5mH$.

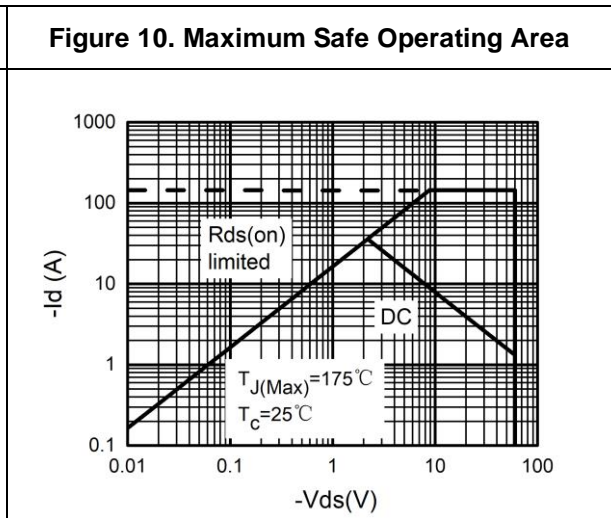
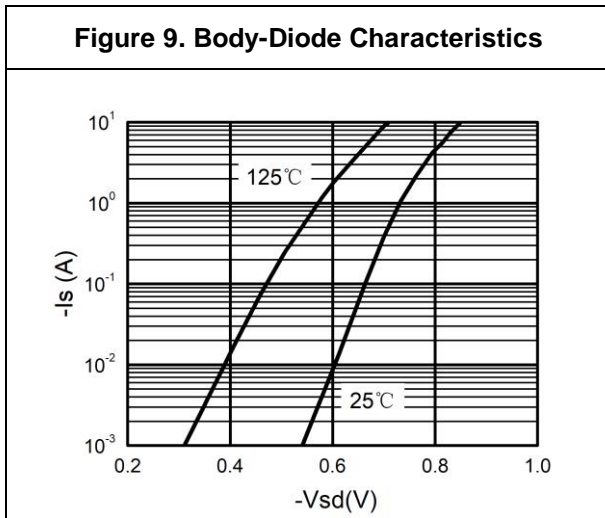
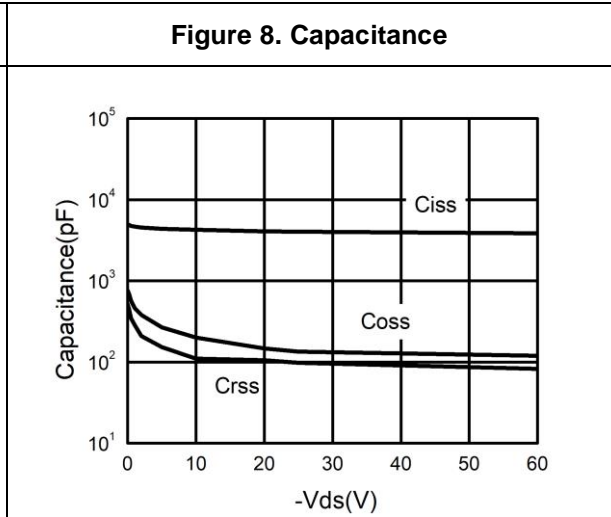
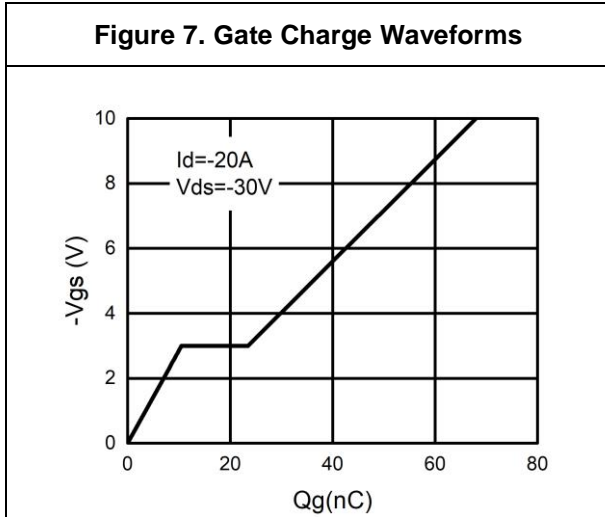
Notes 3.Repetitive Rating: Pulse width limited by maximum junction temperature.

Typical Electrical And Thermal Characteristics (Curves)

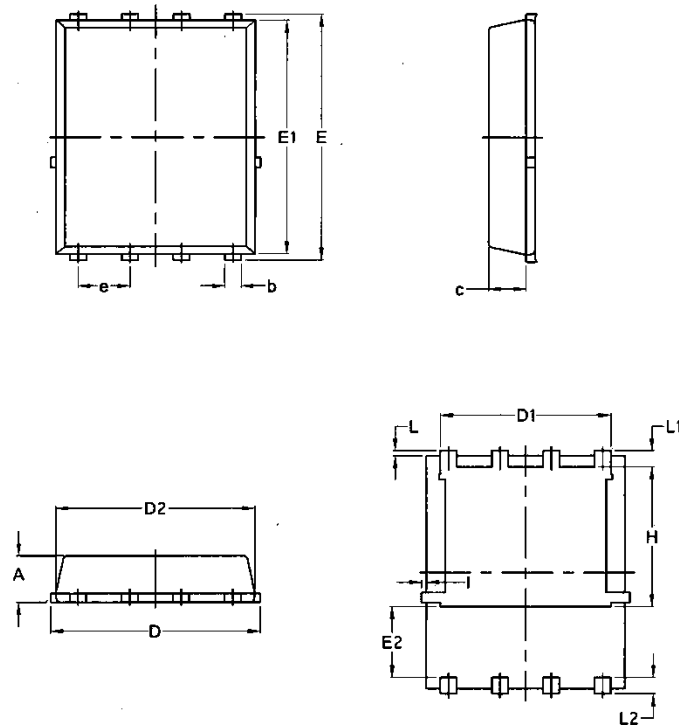


TM30P06NF

P-Channel Enhancement Mosfet



Package Mechanical Data: DFN5x6-8L



Symbol	Common			
	mm		Inch	
	Min	Max	Min	Max
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.0970	0.0324	0.082
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	/	0.0630	/
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	/	0.18	/	0.0070