

60V N-Channel MOSFET

Features

- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- Capable doing Cu wire bonding
- ESD protected Gate HBM 2KV

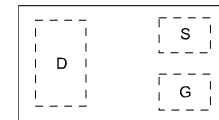
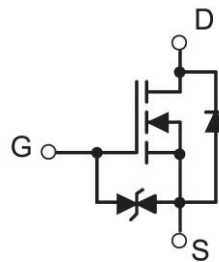
Application

- Power Management in Note book
- Portable Equipment
- Battery Powered System

MOSFET Product Summary

V_{DSS}	$R_{DS(ON) Max}$	I_D
60V	3Ω @ $V_{GS}=10V$	450mA
	4Ω @ $V_{GS}=4.5V$	
	4.5Ω @ $V_{GS}=3V$	

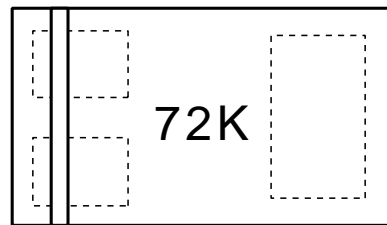
Package and Pin Configuration



Circuit diagram

DFN1006-3L

Marking Information



72K = Device Marking Code

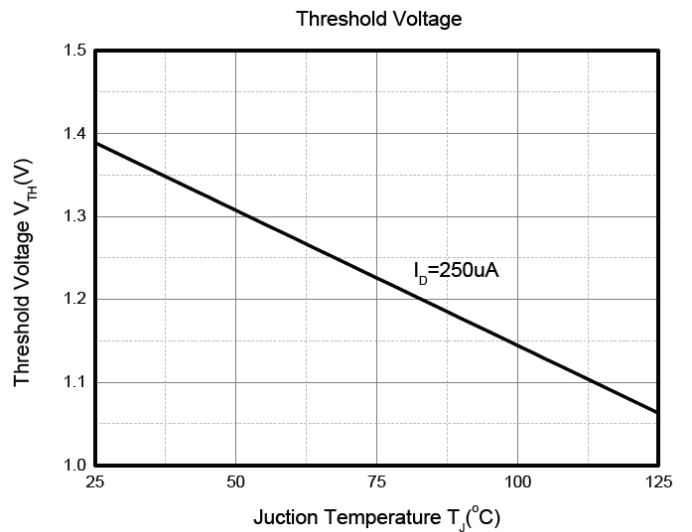
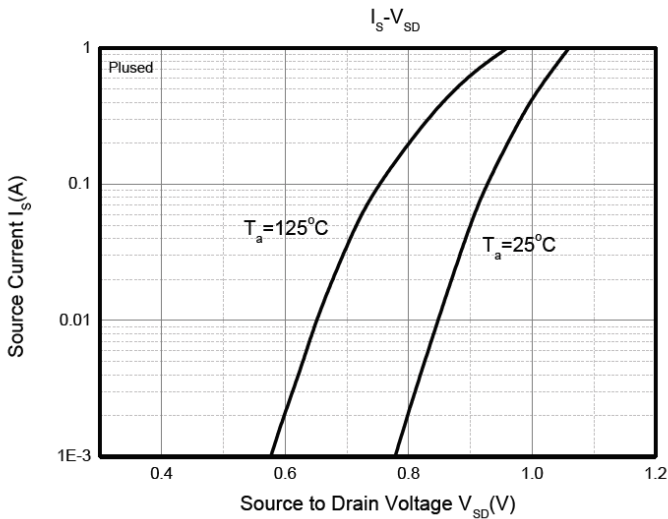
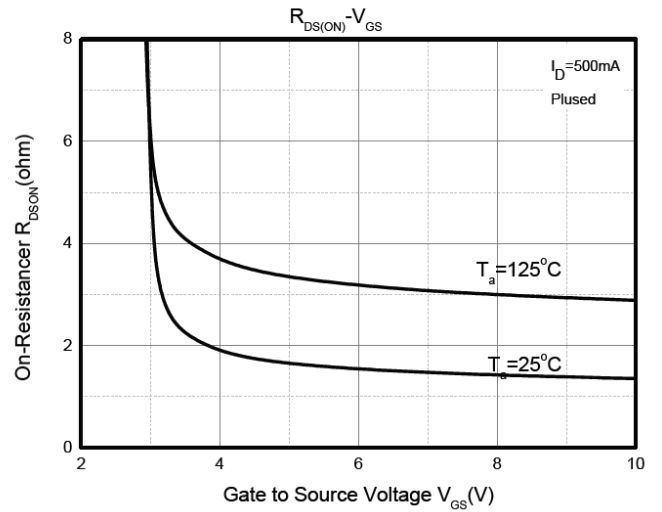
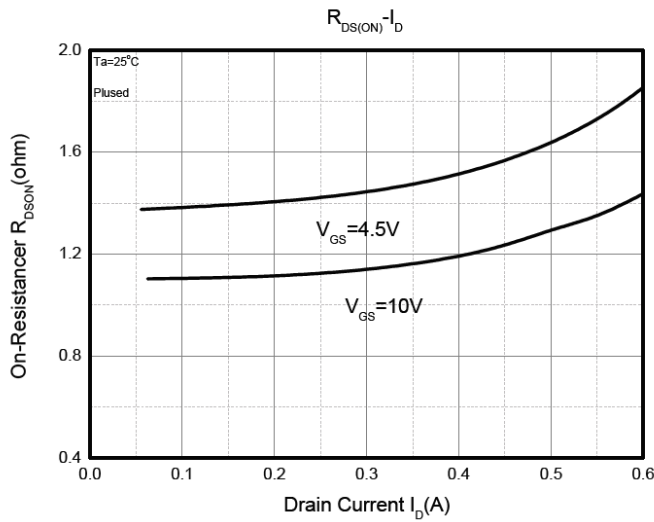
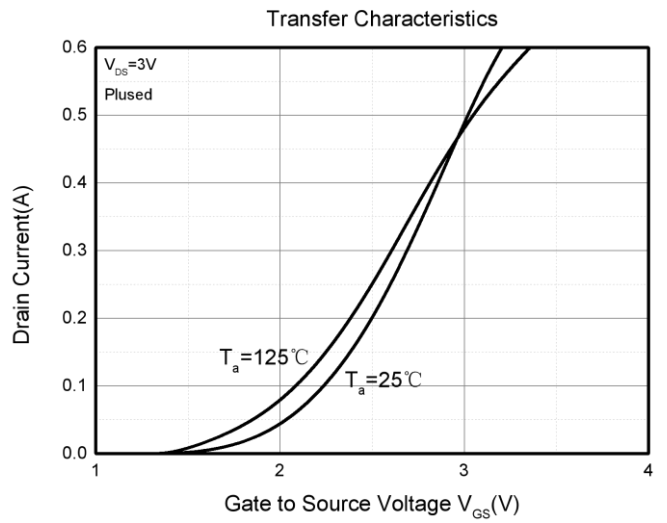
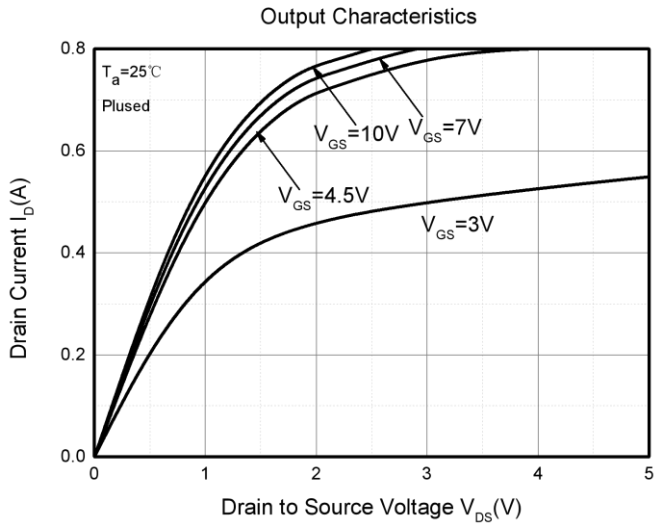
Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	450	mA
Power Dissipation	P_D	0.36	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

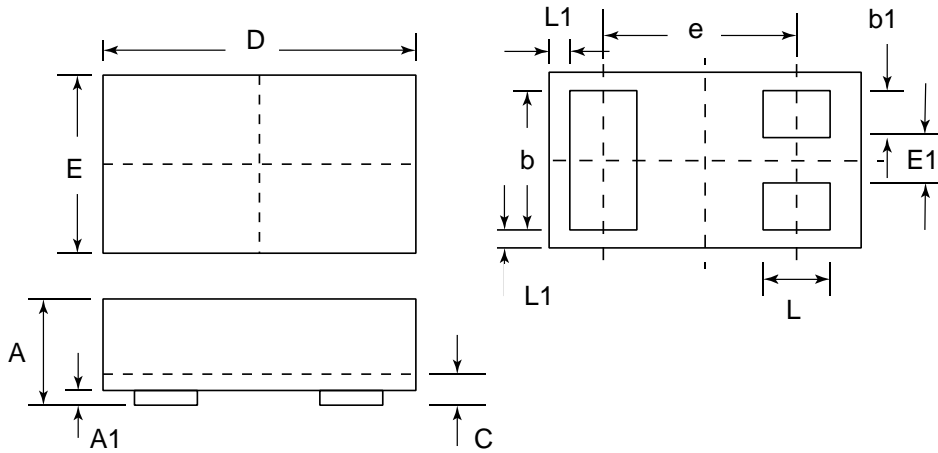
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1		2.5	V
Gate-Body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	μA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=500mA$			3	Ω
		$V_{GS}=4.5V, I_D=200mA$			4	
		$V_{GS}=3V, I_D=10mA$			4.5	
Diode Forward Voltage	V_{SD}	$I_S=200mA, V_{GS}=0V$		0.82	1.3	V
Dynamic characteristics						
Total Gate Charge	Q_g	$V_{DS}=15V, V_{GS}=4.5V, I_D=200mA$		1.5		nC
Gate-Source Charge	Q_{gs}			1.9		
Gate-Drain Charge	Q_{gd}			0.4		
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		28		pF
Output Capacitance	C_{oss}			9		
Reverse Transfer Capacitance	C_{rss}			2		
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=30V, R_L=150\Omega, I_D=200mA, V_{GEN}=10V, R_G=10\Omega$		8.5		ns
Turn-On Rise Time	t_r			6		
Turn-Off Delay Time	$t_{d(off)}$			31.8		
Turn-Off Fall Time	t_f			15.5		

Typical Characteristics

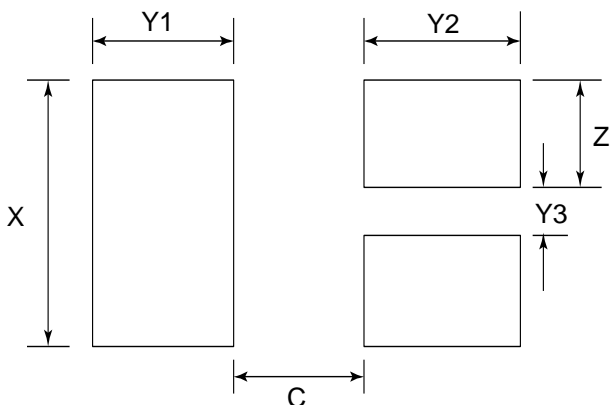


DFN1006-3L Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
b1	0.10	0.15	0.20	0.004	0.006	0.008
C	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
E1	0.15	0.20	0.25	0.006	0.008	0.010
L	0.20	0.25	0.30	0.008	0.010	0.012
L1	0.05 REF			0.0002 REF		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	0.25	0.010
X	0.65	0.024
Y1	0.50	0.020
Y2	0.50	0.020
Y3	0.25	0.010
Z	0.20	0.008