

Description

This 60V,0.3A N-Channel MOSFET in a DFN1006-3L Plastic Package.

Applications

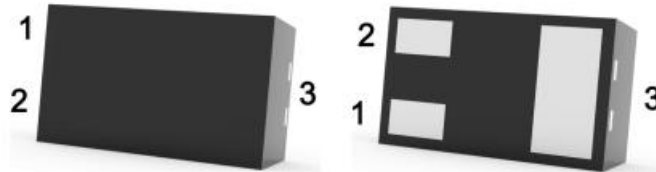
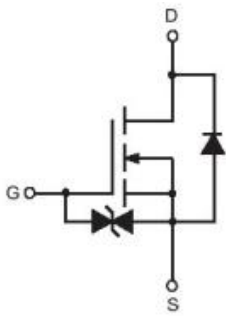
Intended for use in general purpose switching and phase control applications

Features

- Sensitive gate trigger current and Low Holding current
- ESD protected up to 2KV
- Halogen-free Product

V_{DSS}	$R_{DS(on)}$ (Typ)	I_D
60V	1.7Ω	0.3A

Equivalent Circuit & Pinning



Pin1:Gate Pin2:Source Pin3:Drain

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage	V_{DGR}	60	V
Drain Current - Continuous	I_D (Ta=25℃)	300	mA
	I_D (Ta=85℃)	210	
Drain Current - Pulsed	I_{DM}	1200	mA
Gate-Source Voltage - Continuous	V_{GSS}	±20	V
Power Dissipation	P_D	360	mW
Junction Temperature Range	T_j	-55~150	℃
Storage Temperature Range	T_{stg}	-55~150	℃
Maximum Junction-to-Ambient	$R_{\theta JA}$	350	℃/W
Maximum Junction-to-Solder Point	$R_{\theta JSP}$	92	℃/W

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$V_{GS}=0$ $I_D=250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=60V$			1.0	μA
Gate-Source Leakage	I_{GSS}	$V_{DS}=0V$ $V_{GS}=\pm 20V$			±10	μA
Static Drain-Source On-Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=0.5A$		1.7	2	Ω
	$R_{DS(on)(2)}$	$V_{GS}=5V$ $I_D=0.05A$		1.9	2.5	Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=250mA$			1.35	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.4	2.0	V
Input Capacitance	C_{iss}	$V_{GS}=0V$, $f=1MHz$, $V_{DS}=20V$		25	50	pF
Output Capacitance	C_{oss}			11	25	
Reverse Transfer Capacitance	C_{rss}			2.5	5	
Total Gate Charge	$Q_{G(TOT)}$	$V_{GS}=4.5V$, $V_{DS}=10V$; $I_D=200mA$		0.7		nC
Threshold Gate Charge	$Q_{G(TH)}$			0.1		
Gate-to-Source Charge	Q_{GS}			0.3		
Gate-to-Drain Charge	Q_{GD}			0.1		
Turn-On Delay Time	$t_{d(ON)}$	$V_{GS}=10V$, $V_{DD}=25V$, $I_D=500mA$, $R_G=25\Omega$		12.2		ns
Rise Time	t_r			9.0		
Turn-Off Delay Time	$t_{d(OFF)}$			55.8		
Fall Time	t_f			29		

Electrical Characteristic Curve

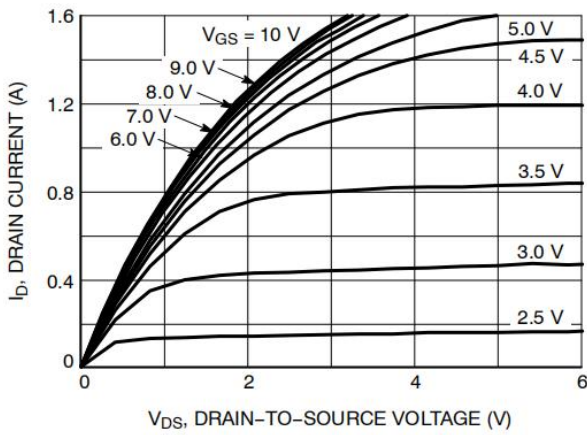


Figure 1. On-Region Characteristics

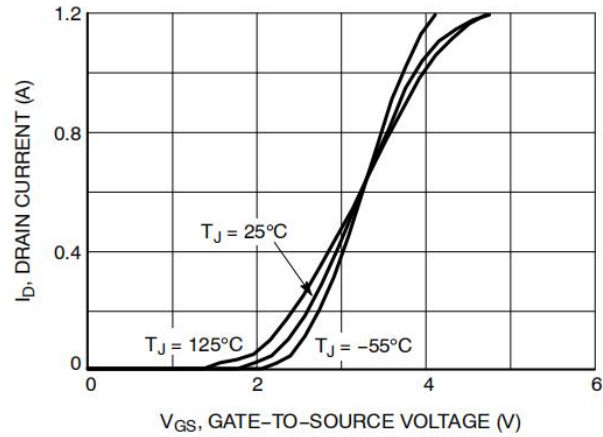


Figure 2. Transfer Characteristics

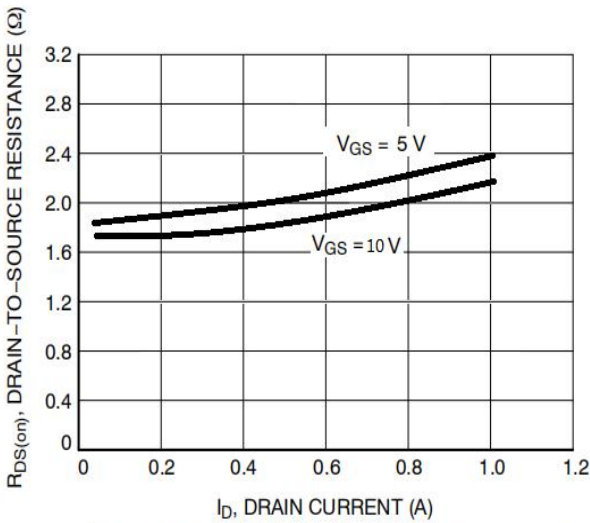


Figure 3. On-Resistance vs. Drain Current and Temperature

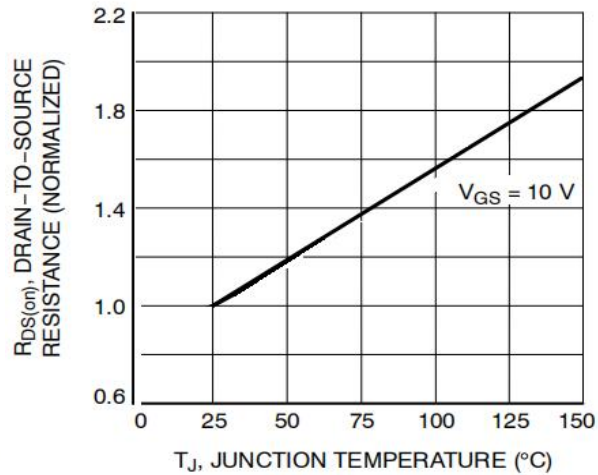


Figure 4 On-Resistance Variation with Temperature

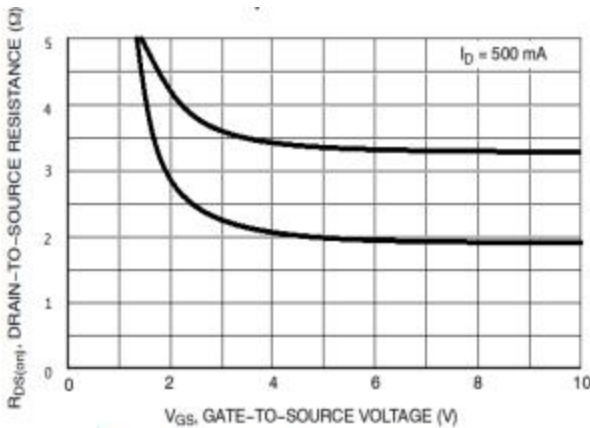


Figure 5. On-Resistance vs. Gate-to-Source Voltage

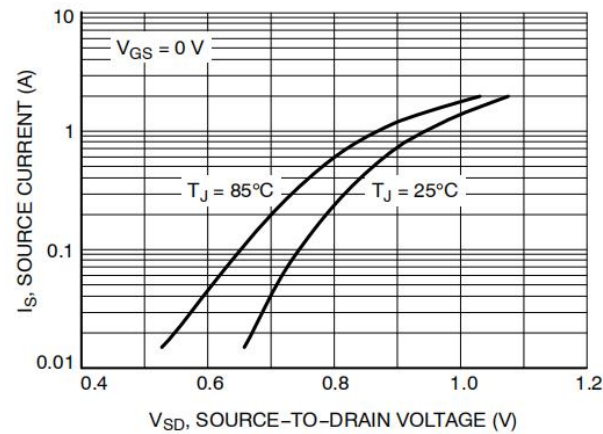


Figure 6 Diode Forward Voltage vs. Current

Electrical Characteristic Curve

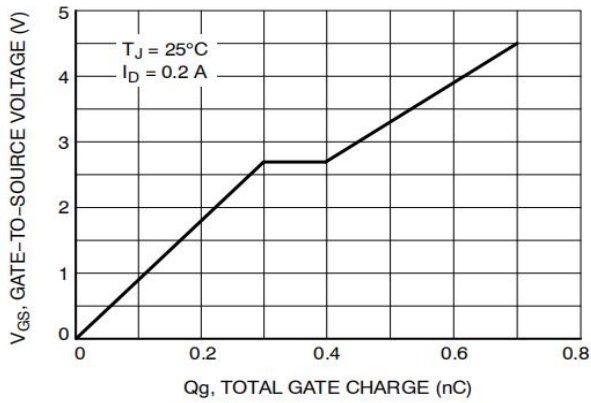


Figure 7 . Gate-to-Source and Drain-to-Source Voltage vs. Total Charge

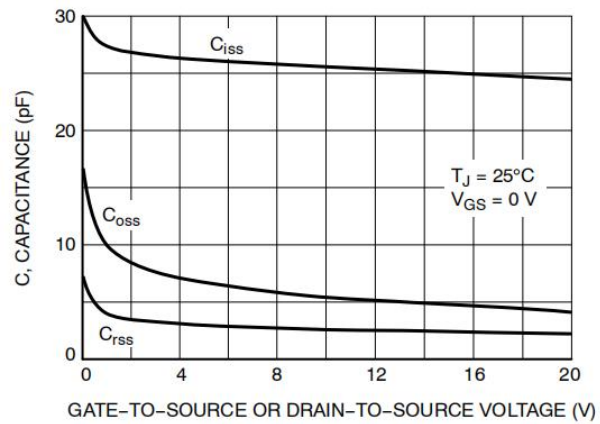


Figure 8. Capacitance Variation

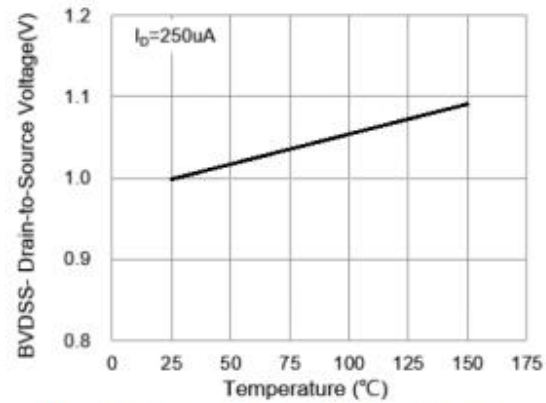
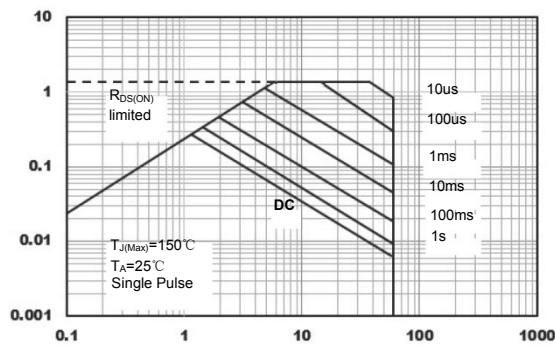


Figure 10 : Breakdown Voltage vs. Temperature

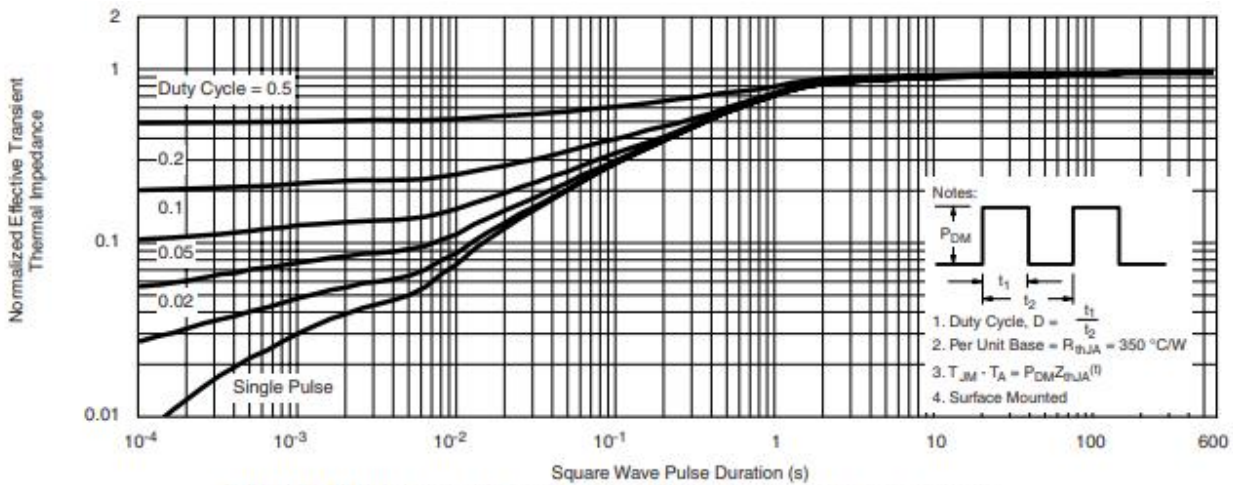


Figure 11 : Normalized Thermal Transient Impedance, Junction-to-Ambient

Marking Instructions



Note:

702K2: Product Type

Packaging SPEC.

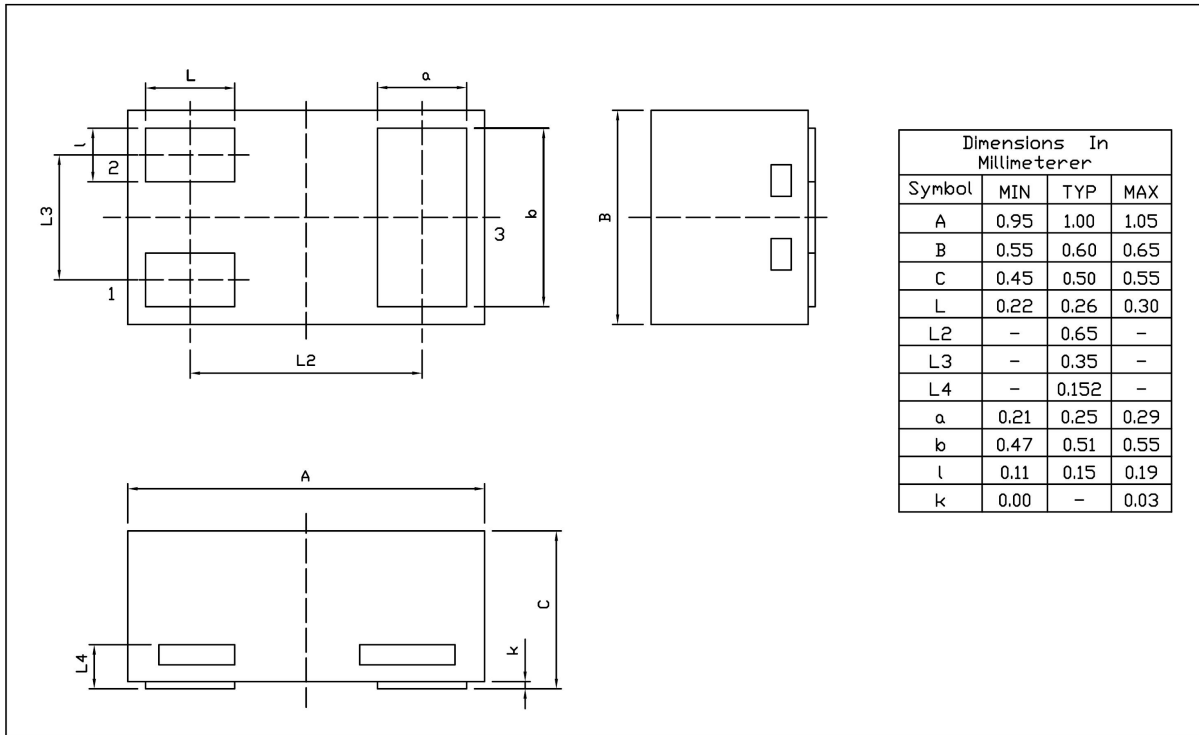
REEL INFORMATION

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
DFN1006-3L	10,000	10	100,000	4	400,000	7" × 8	210×205×205	445×230×435

Package Outline Dimensions

DFN1006-3L

Unit:mm



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