

PW39K-T

20V P-Channel MOSFET

-0.66A -20V; $R_{DS(ON)typ}=450m\Omega@-4.5V$, $R_{DS(ON)typ}=650m\Omega@-2.5V$,
 $R_{DS(ON)typ}=950m\Omega@-1.8V$

FEATURE

- Surface Mount Package
- P-Channel Switch with Low RDS(on)
- Operated at Low Logic Level Gate Drive
- ESD Protected

Application

- Load/Power Switching
- Interfacing, Logic Switching
- Battery Management for Ultra Small Portable Electronics

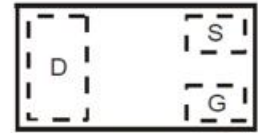
MARKING:



DFN1006-3L-A

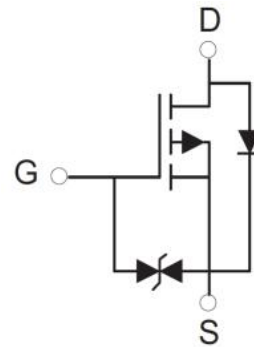


Bottom View



Top View
Internal Schematic

Schematic diagram



ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ⁽¹⁾	I_D	-0.66	A
Pulsed Drain Current($t_p=10\mu\text{s}$)	I_{DM}	-1.2	A
Power Dissipation ⁽¹⁾	P_D	100	mW
Thermal Resistance from Junction to Ambient ⁽¹⁾	$R_{\theta JA}$	1250	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	TL	260	$^\circ\text{C}$

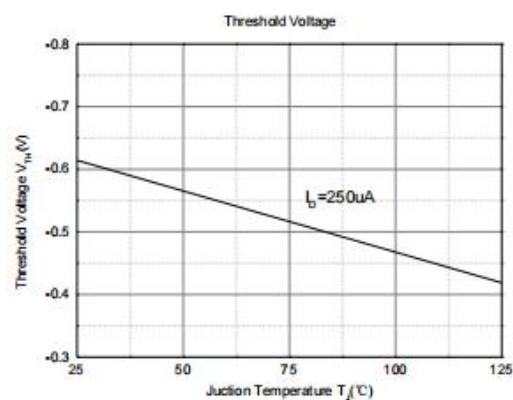
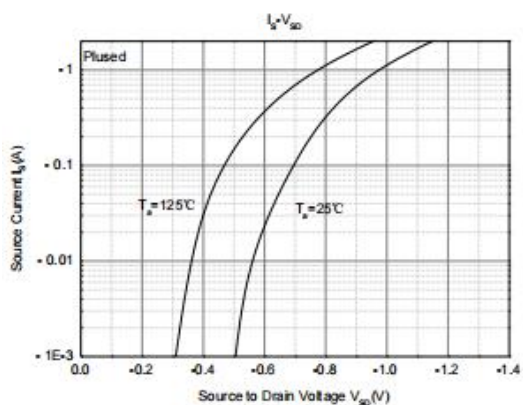
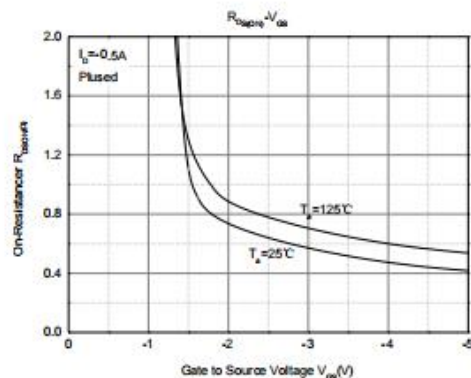
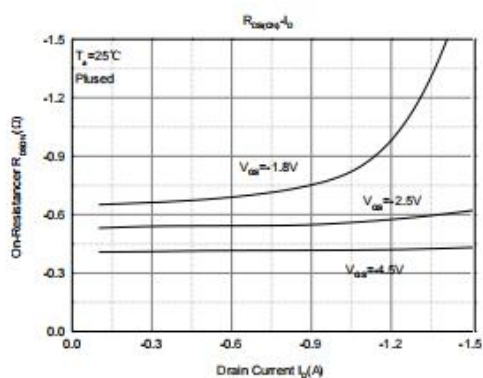
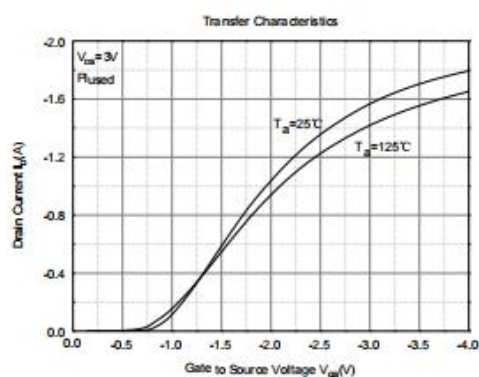
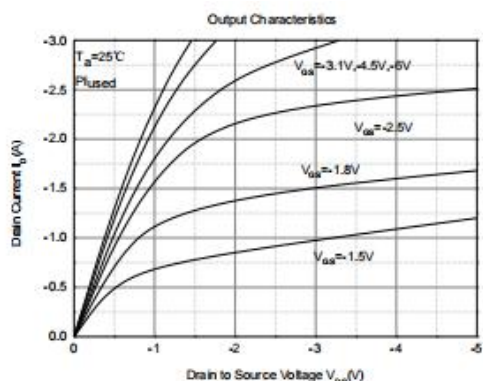
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Stat Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±10V, V _{DS} = 0V			±20	μA
Gate threshold voltage ⁽²⁾	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.35	-0.61	-1.1	V
Drain-source on-resistance ⁽²⁾	R _{DS(on)}	V _{GS} = -4.5V, I _D = -1A		450	580	mΩ
		V _{GS} = -2.5V, I _D = -0.8A		650	840	
		V _{GS} = -1.8V, I _D = -0.5A		950		
Forward tranconductance ⁽²⁾	g _{FS}	V _{DS} = -10V, I _D = -0.54A		1.2		S
Dynamic characteristics⁽⁴⁾						
Input Capacitance	C _{iss}	V _{DS} = -16V, V _{GS} = 0V, f = 1MHz		113		pF
Output Capacitance	C _{oss}			15		
Reverse Transfer Capacitance	C _{rss}			9		
Switching characteristics⁽⁴⁾						
Turn-on delay time ⁽³⁾	t _{d(on)}	V _{DD} = -10V, V _{GS} = -4.5V, I _D = -200mA, R _G = 10Ω		9		ns
Turn-on rise time ⁽³⁾	t _r			5.7		
Turn-off delay time ⁽³⁾	t _{d(off)}			32.6		
Turn-off fall time ⁽³⁾	t _f			20.3		
Source-Drain Diode characteristics						
Diode Forward voltage	V _{DS}	I _S = -0.5A, V _{GS} = 0V			-1.2	V

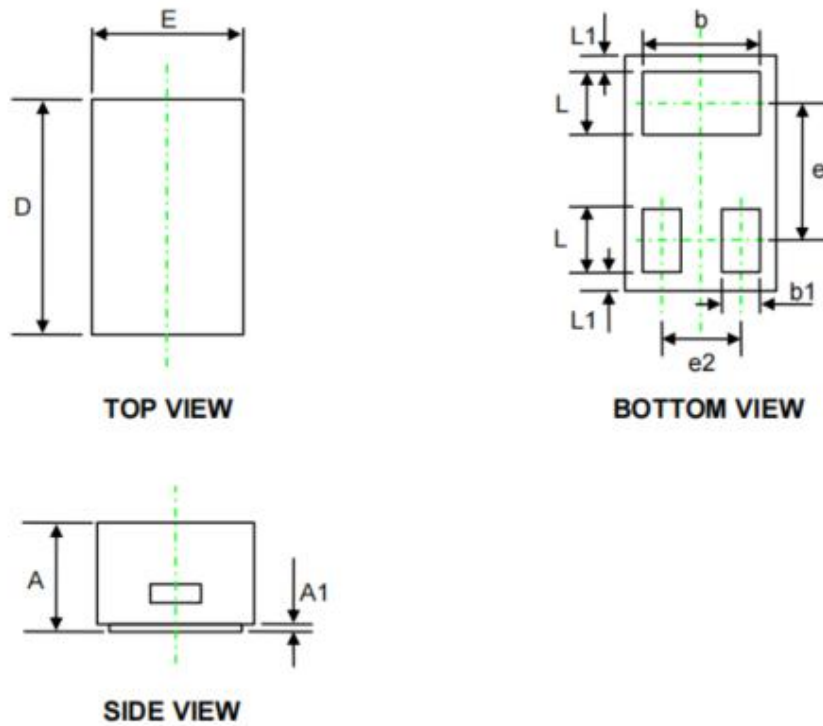
Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producing.

Typical Electrical and Thermal Characteristics



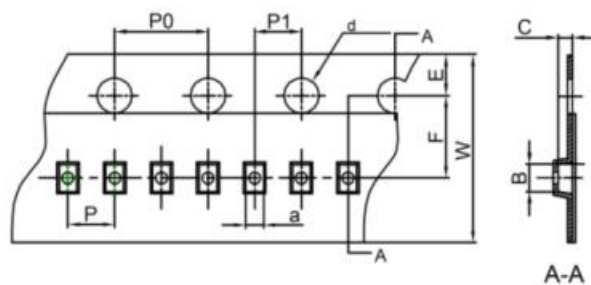
DFN1006-3L-A Package Information



Symbol	Dimensions In Millimeters (mm)		
	Min.	Typ.	Max.
A	0.34	0.37	0.40
A1	0.00	0.03	0.05
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b	0.45	0.50	0.55
e	-	0.65	-
e2	-	0.35	-
L1	0.05 REF.		
L	0.20	0.25	0.30
b1	0.10	0.15	0.20

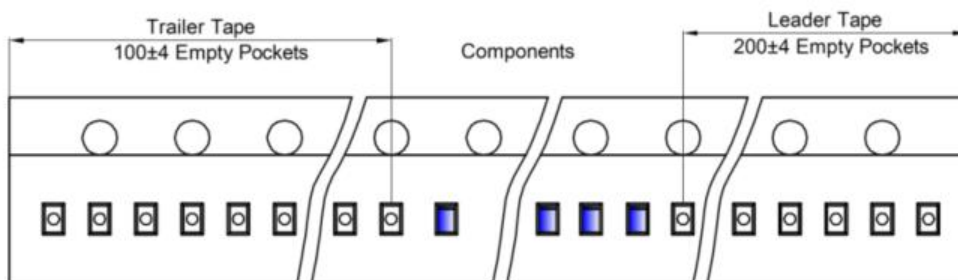
DFN1006-3L-A Tape and Reel

DFN1006-3L-A Embossed Carrier Tape

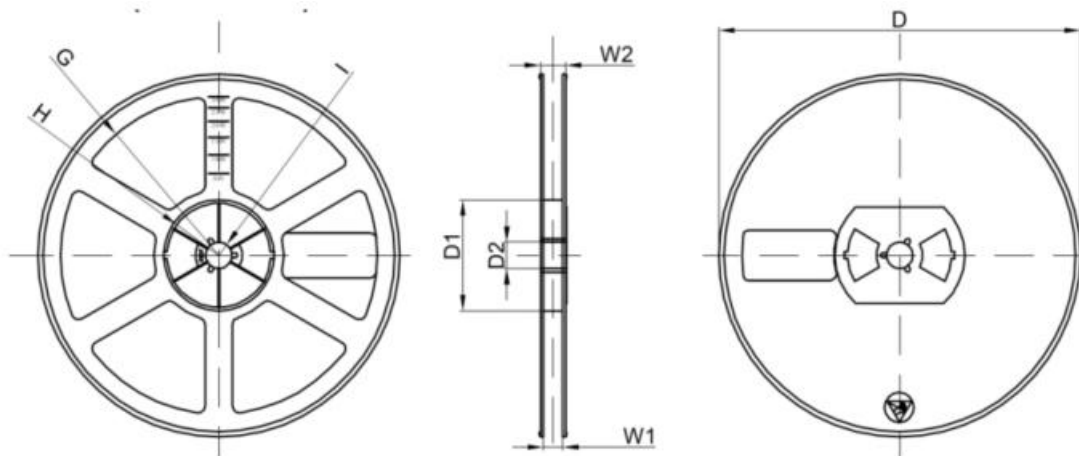


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
DFN1006-3L	0.66	1.15	0.66	Ø1.50	1.75	3.50	4.00	2.00	2.00	8.00

DFN1006-3L-A Tape Leader and Trailer



DFN1006-3L-A Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
10000 pcs	7 inch	100,000 pcs	203×203×195	400,000 pcs	438×438×220	