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CJAA3139K-TP

P-Channel Enhancement Mode MOSFET

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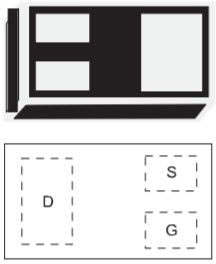
Features

- Lead free product is acquired
- Surface mount package
- P-Channel switch with low $R_{DS(on)}$
- Operated at low logic level gate drive
- ESD protected gate
- Complementary to TPM2008EP3

Application

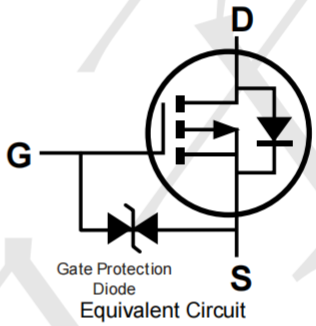
- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

Package and Pin Configuration



DFN1006-3L

Circuit diagram



Equivalent Circuit

Marking: U4

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

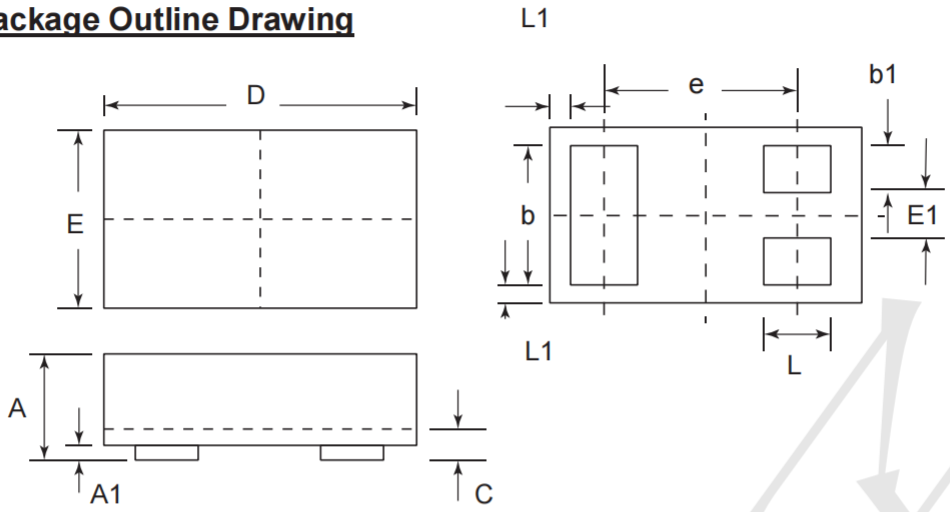
Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	-20	V
Typical gate-source voltage	V_{GS}	±12	V
Continuous drain current (note 1)	I_D	-0.66	A
Pulsed drain current (t_p=10μs)	I_{DM}	-1.2	A
Power dissipation (note 2)	P_D	100	mW
Thermal resistance from junction to ambient (note 1)	$R_{\theta JA}$	1250	°C/W
Junction temperature range	T_J	150	°C
Storage temperature range	T_{STG}	-55 ~ +150	°C
Lead temperature for soldering purposes (1/8" from case for 10s)	T_L	260	°C

Electrical Characteristics (T_A = 25°C unless otherwise noted)

A

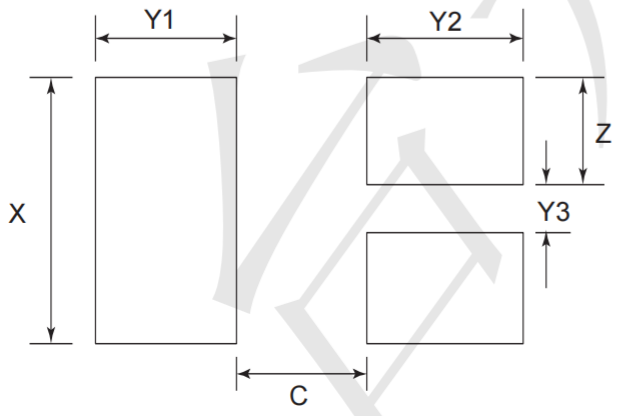
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V , I_D = -250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} = -20V , V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} = ±10V , V_{DS} = 0V			±20	uA
Gate threshold voltage (note 2)	$V_{GS(th)}$	V_{DS} = V_{GS} , I_D = -250μA	-0.35		-1.1	V
Drain-source on-resistance (note 2)	$R_{DS(on)}$	V_{GS} = -4.5V , I_D = -1A			520	mΩ
		V_{GS} = -2.5V , I_D = -0.8A			700	
		V_{GS} = -1.8V , I_D = -0.5A		950		
Forward tranconductance (note 2)	g_{FS}	V_{DS} = -10V , I_D = -0.54A		1.2		S
Diode forward voltage	V_{SD}	I_S = -0.5A , V_{GS} = 0V			-1.2	V
DYNAMIC PARAMETERS (note 4)						
Input capacitance	C_{iss}	V_{DS} = -16V , V_{GS} = 0V, f = 1MHz		113	170	pF
Output capacitance	C_{oss}			15	25	
Reverse transfer capacitance	C_{rss}			9	15	
SWITCHING PARAMETERS (note 4)						
Turn-on delay time (note 3)	$t_{d(on)}$	V_{GS} = -4.5V , V_{DS} = -10V , I_D = -200mA , R_{GEN} = 10Ω		9		ns
Turn-on rise time (note 3)	t_r			5.8		
Turn-off delay time (note 3)	$t_{d(off)}$			32.7		
Turn-off fall time (note 3)	t_f			20.3		

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