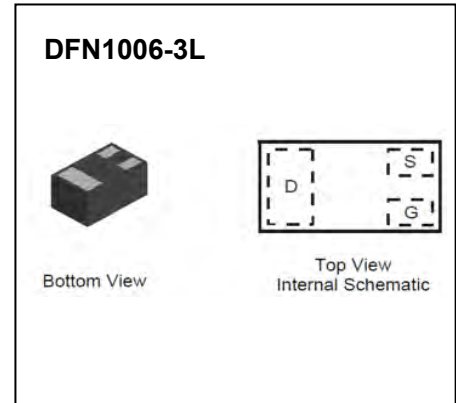


**DFN1006-3L Plastic-Encapsulate MOSFETs**

**CJBA3541K N-Channel MOSFET**

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
30V	500mΩ@4.5V	0.6A
	600mΩ@2.5V	



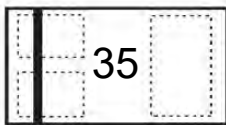
**FEATURE**

- Lead Free Product is Acquired
- Surface Mount Package
- N-Channel Switch with Low  $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- ESD Protected Gate

**APPLICATION**

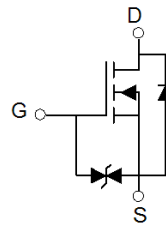
- Load/ Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

**MARKING:**



Top View  
Bar Denotes Gate and Source Side

**Equivalent Circuit**



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Typical Gate-Source Voltage	$V_{GS}$	±12	V
Continuous Drain Current (note 1)	$I_D$	0.6	A
Pulsed Drain Current ( $t_p=10\mu\text{s}$ )	$I_{DM}$	1.8	A
Power Dissipation (note 1)	$P_D$	100	mW
Thermal Resistance from Junction to Ambient (note 1)	$R_{\theta JA}$	1250	$^\circ\text{C/W}$
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 10 s)	$T_L$	260	$^\circ\text{C}$

## MOSFET ELECTRICAL CHARACTERISTICS

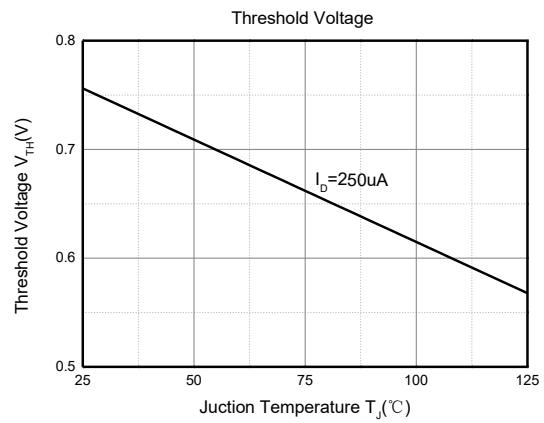
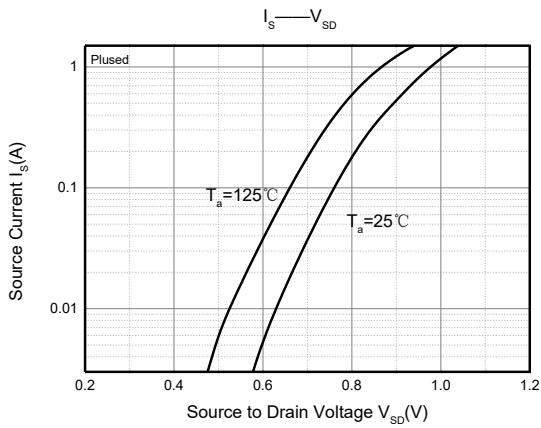
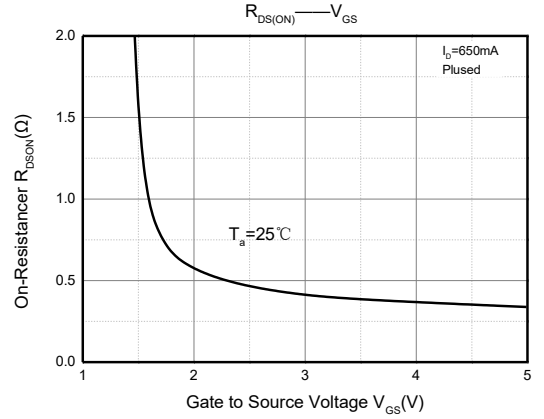
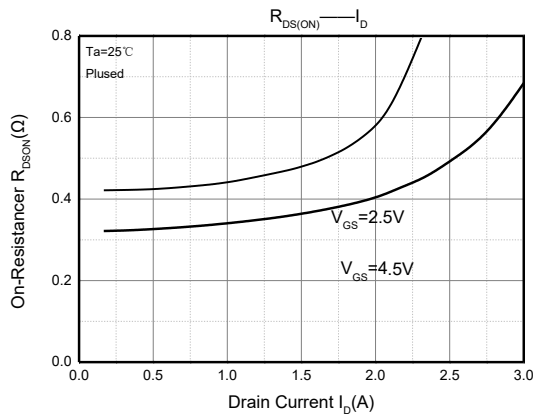
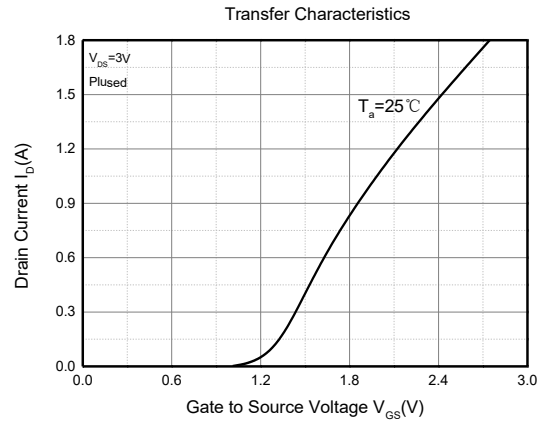
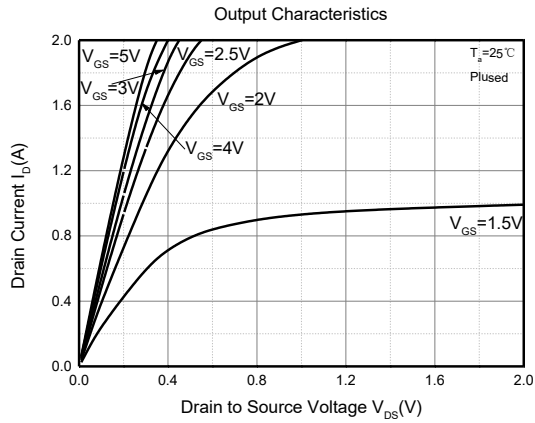
$T_a=25^{\circ}\text{C}$  unless otherwise noted

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 30V, V_{GS} = 0V$			1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 10V, V_{DS} = 0V$			$\pm 20$	$\mu A$
Gate threshold voltage <sup>(2)</sup>	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.8	1.0	1.5	V
Drain-source on-resistance <sup>(2)</sup>	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 600mA$		320	500	m $\Omega$
		$V_{GS} = 2.5V, I_D = 300mA$		410	600	
Forward transconductance	$g_{FS}$	$V_{DS} = 10V, I_D = 150mA$	150			mS
<b>Dynamic characteristics<sup>(4)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 16V, V_{GS} = 0V, f = 1MHz$		44	120	pF
Output Capacitance	$C_{oss}$			15	20	
Reverse Transfer Capacitance	$C_{rss}$			8	15	
<b>Switching Characteristics<sup>(4)</sup></b>						
Turn-on delay time <sup>(3)</sup>	$t_{d(on)}$	$V_{DS} = 10V, I_D = 500mA,$ $V_{GS} = 4.5V, R_G = 10\Omega$		5.0		ns
Turn-on rise time <sup>(3)</sup>	$t_r$			8.2		
Turn-off delay time <sup>(3)</sup>	$t_{d(off)}$			23		
Turn-off fall time <sup>(3)</sup>	$t_f$			41		
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage <sup>(3)</sup>	$V_{DS}$	$I_S = 0.15A, V_{GS} = 0V$			1.2	V

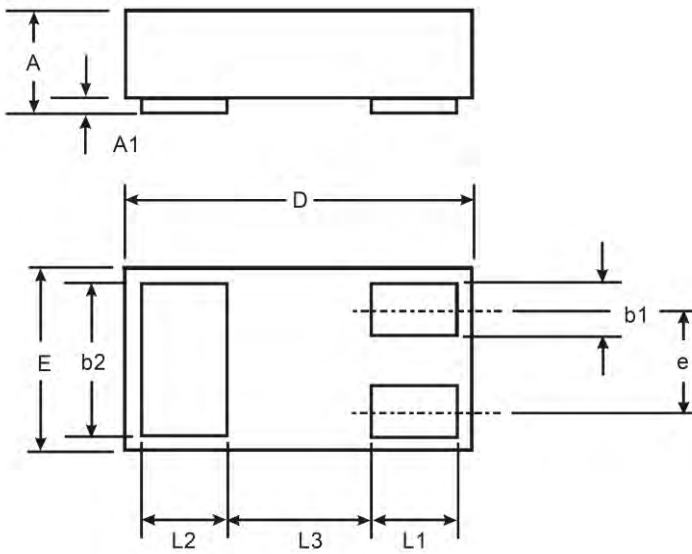
### Notes:

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

# Typical Characteristics



## DFN1006-3L Package Outline Dimensions



X1-DFN1006-3			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0	0.05	0.03
b1	0.10	0.20	0.15
b2	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	—	—	0.35
L1	0.20	0.30	0.25
L2	0.20	0.30	0.25
L3	—	—	0.40
All Dimensions in mm			

### NOTICE

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