

## FTK75N06D 60V/75A N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
60V	11.5mΩ@10V	75A

### GENERAL DESCRIPTION

The FTK75N06D uses advanced trench technology and design to provide excellent  $R_{DS(on)}$  with low gate charge. It can be used in a wide variety of applications.

### FEATURE

- $V_{DS} = 60V, I_D = 75A$
- $R_{DS(ON)} < 11.5m\Omega @ V_{GS} = 10V$  (Typ:9.1mΩ)
- Good stability and uniformity with high EAS
- Excellent package for good heat dissipation
- High density cell design for ultra low  $R_{dson}$
- Special process technology for high ESD capability
- Fully characterized avalanche voltage and current

### APPLICATION

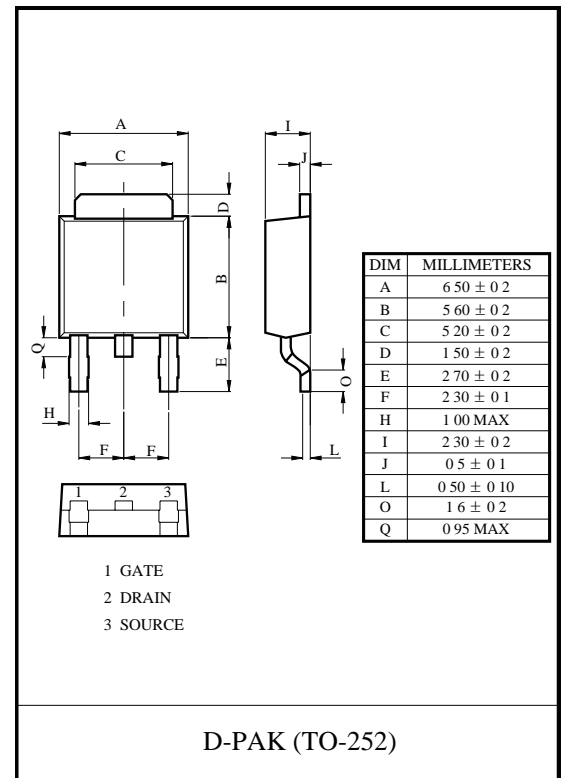
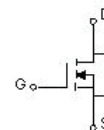
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

### MARKING



CJU75N06= Device code  
 Solid dot = Green molding compound device,  
 if none, the normal device  
 XXX=Date Code

### EQUIVALENT CIRCUIT



### 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	
Continuous Drain Current	$I_D$	75	A
Pulsed Drain Current	$I_{DM}$	300	
Single Pulsed Avalanche Energy (note1)	$E_{AS}$	300	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature Ra	$T_{STG}$	-55 ~ +150	
Maximum lead temperature for soldering purposes , 1/8" from case for 5 seconds	$T_L$	260	



# FTK75N06D

## Electrical characteristics (T<sub>a</sub>=25°C unless otherwise noted)

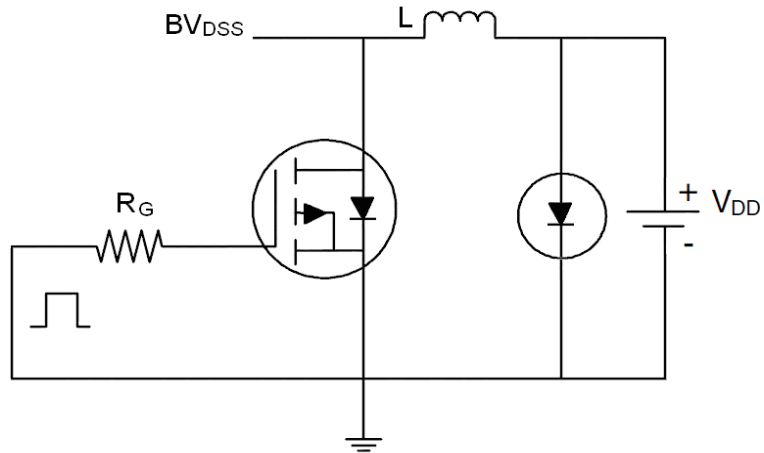
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Off characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR) DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	60	68		V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = 60V, V <sub>GS</sub> = 0V			1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
<b>On characteristics (note2)</b>						
Gate-threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	2	2.7	4	V
Static drain-source on-state resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =30A		9.1	11.5	mΩ
Forward transconductance	g <sub>FS</sub>	V <sub>DS</sub> =25V, I <sub>D</sub> =30A	20			S
<b>Dynamic characteristics (note 3)</b>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f =1MHz		2350		pF
Output capacitance	C <sub>oss</sub>			237		
Reverse transfer capacitance	C <sub>rss</sub>			205		
<b>Switching characteristics (note 3)</b>						
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =10V, I <sub>D</sub> =30A		50		nC
Gate-source charge	Q <sub>gs</sub>			12		
Gate-drain charge	Q <sub>gd</sub>			16		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> =30V, V <sub>GS</sub> =10V, R <sub>G</sub> =2.5Ω, I <sub>D</sub> =2A, R <sub>L</sub> =15Ω		16		ns
Turn-on rise time	t <sub>r</sub>			10		
Turn-off delay time	t <sub>d(off)</sub>			45		
Turn-off fall time	t <sub>f</sub>			12		
<b>Drain-Source Diode Characteristics</b>						
Drain-source diode forward voltage(note2)	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =30A			1.2	V
Continuous drain-source diode forward current	I <sub>S</sub>				75	A
Pulsed drain-source diode forward current	I <sub>SM</sub>				300	A

### Notes:

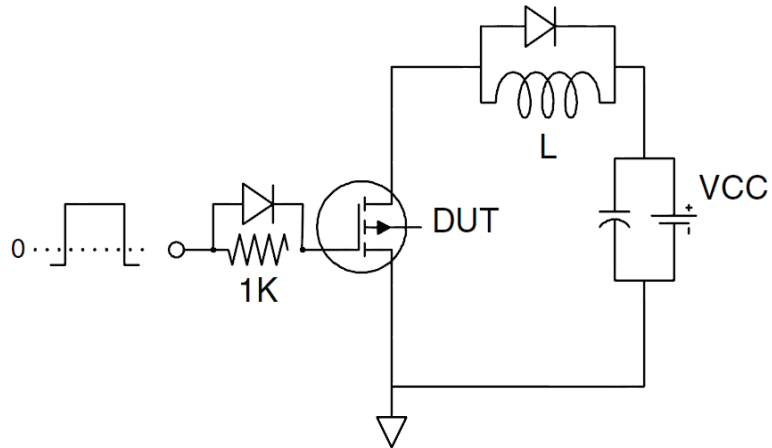
1. L=0.5mH, V<sub>DD</sub>=30V, V<sub>G</sub>=10V, R<sub>G</sub>=25Ω, Starting T<sub>J</sub>=25°C.
2. Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
3. Guaranteed by design, not subject to production.

## Test Circuit

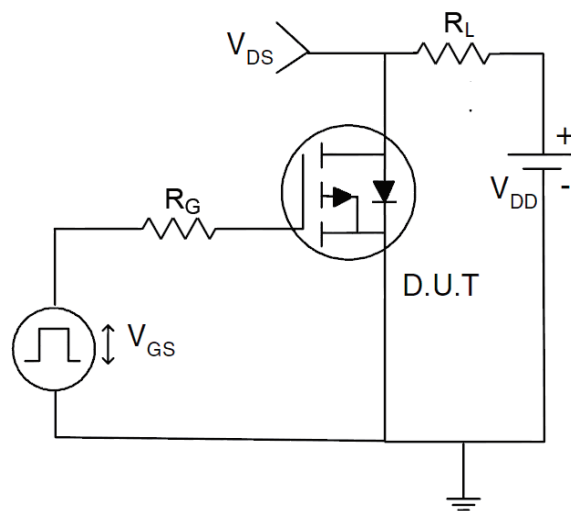
### 1) E<sub>AS</sub> Test Circuit



### 2) Gate Charge Test Circuit



### 3) Switch Time Test Circuit





## Typical Electrical and Thermal Characteristics (curves)

