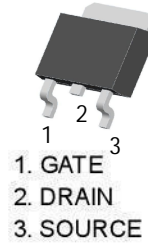




15N10 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
100V	0.09 Ω @10V	15A

TO-252



GENERAL DESCRIPTION

The 15N10 provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device is suitable for use as a load switch or in PWM applications.

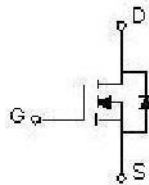
FEATURE

- Excellent package for good heat dissipation
- Ultra low gate charge
- Low reverse transfer capacitance
- Fast switching capability
- Avalanche energy specified

APPLICATION

- Power switching application

EQUIVALENT CIRCUIT



Maximum ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	15	A
Pulsed Drain Current	I_{DM}	38.4	
Single Pulsed Avalanche Energy (note1)	E_{AS}	150	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	
Maximum lead temperature for soldering purposes , 1/8" from case for 5 seconds	T_L	260	

MOSFET ELECTRICAL CHARACTERISTICS

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
On characteristics (note2)						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.2	2.0	2.5	V
Static drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5A$		0.09	0.115	Ω
Dynamic characteristics (note 3)						
Input capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		690		pF
Output capacitance	C_{oss}			120		
Reverse transfer capacitance	C_{rss}			90		
Switching characteristics (note 3)						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 30V, R_G = 2.5\Omega, I_D = 2A, V_{GS} = 10V$		11		ns
Turn-on rise time	t_r			7.4		
Turn-off delay time	$t_{d(off)}$			35		
Turn-off fall time	t_f			9.1		
Total Gate Charge	Q_g	$V_{DS} = 30V, V_{GS} = 10V, I_D = 3A$		15.5		nC
Gate-Source Charge	Q_{gs}			3.2		nC
Gate-Drain Charge	Q_{gd}			4.7		nC
Drain-Source Diode Characteristics						
Drain-source diode forward voltage (note2)	V_{SD}	$V_{GS} = 0V, I_S = 9A$			1.2	V
Continuous drain-source diode forward current	I_S				9.6	A
Pulsed drain-source diode forward current	I_{SM}				38.4	A

Notes :

- $I_L = 7A, V_{DD} = 50V, R_G = 25\Omega, \text{Starting } T_J = 25^\circ\text{C}.$
- Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production

Typical Characteristics

