

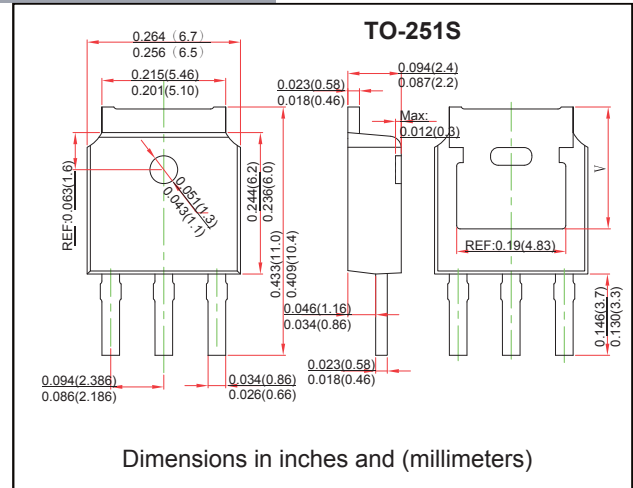
TO-251S Plastic-Encapsulate MOSFETS

FEATURE

- High Current Rating
- Lower Rds(on)
- Lower Capacitance
- Lower Total Gate Charge
- Tighter VSD Specifications
- Avalanche Energy Specified
- 600V N-Channel Power MOSFET

MECHANICAL DATA

- Case style:TO-251S molded plastic
- Mounting position:any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GSS}	±30	
Continuous Drain Current	I_D	4.0	A
Continuous Drain-Source Diode Forward Current	I_S	4.0	
Single Pulsed Avalanche Energy (note1)	E_{AS}	260	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	°C
Maximum lead temperature for soldering purposes, 1/8" from case for 5 seconds	T_L	260	

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
600V	3.0Ω@10V	4A

MOSFET ELECTRICAL CHARACTERISTICS $T_A=25^\circ C$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	600			V
Drain-source diode forward voltage(note2)	V_{SD}	$V_{GS} = 0V, I_S = 4.0A$			1.5	
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 600V, V_{GS} = 0V$			25	μA
Gate-body leakage current, forward(note2)	I_{GSSF}	$V_{DS} = 0V, V_{GS} = 30V$			100	nA
Gate-body leakage current, reverse(note2)	I_{GSSR}	$V_{DS} = 0V, V_{GS} = -30V$			-100	
On characteristics (note2)						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.0	3.0		
Static drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 2.0A$		2.0	3.0	Ω
Forward transconductance	g_{fs}	$V_{DS} = 50V, I_D = 2A$	2.0	2.		S
Dynamic characteristics (note 3)						
Input capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		540		pF
Output capacitance	C_{oss}			125		
Reverse transfer capacitance	C_{rss}			8.0		
Switching characteristics						
Total gate charge	Q_g	$V_{DS} = 480V, V_{GS} = 10V, I_D = 4.0A$		5.0		nC
Gate-source charge	Q_{gs}			2.7		
Gate-drain charge	Q_{gd}			2.0		
Turn-on delay time (note3)	$t_{d(on)}$	$V_{DD} = 300V, V_{GS} = 10V, R_G = 9.1\Omega, I_D = 4.0A$		12	2	ns
Turn-on rise time (note3)	t_r			7.0		
Turn-off delay time (note3)	$t_{d(off)}$			19	4	
Turn-off fall time (note3)	t_f			10	2	

Notes :

1. $L=30mH, I_L=4A, V_{DD}=100V, V_{GS}=10V, R_G=25\Omega$, Starting $T_J=25^\circ C$.
2. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
3. These parameters have no way to verify.

RATINGS AND CHARACTERISTIC CURVES

Typical Characteristics

