

Features

- $R_{DS(ON)} \leq 100m\Omega @ V_{GS}=10V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current

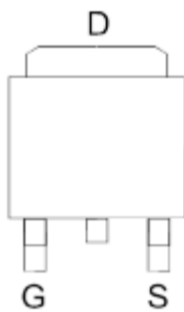
Application

- Power Management in Note book
- DC/DC Converter
- Load Switch
- LCD Display inverter

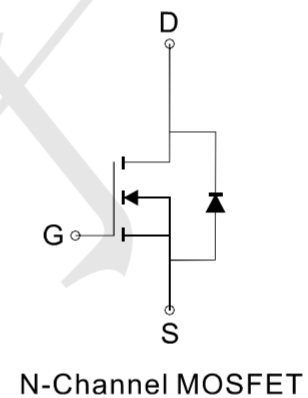
Package and Pin Configuration

(TO-252-3L)

Top View



Circuit diagram



Marking: 16N10

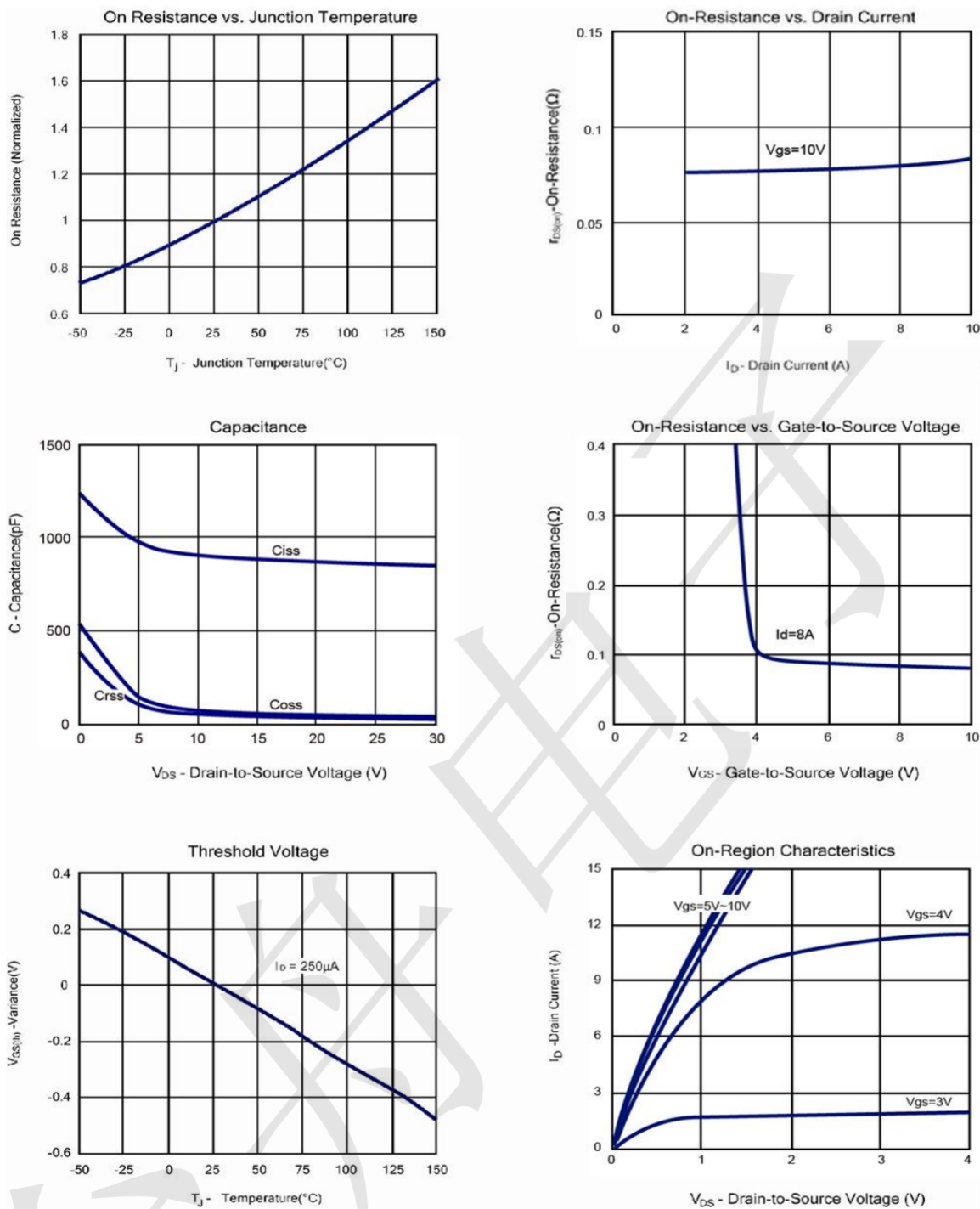
Absolute Maximum Ratings (T_c=25°C unless otherwise specified)

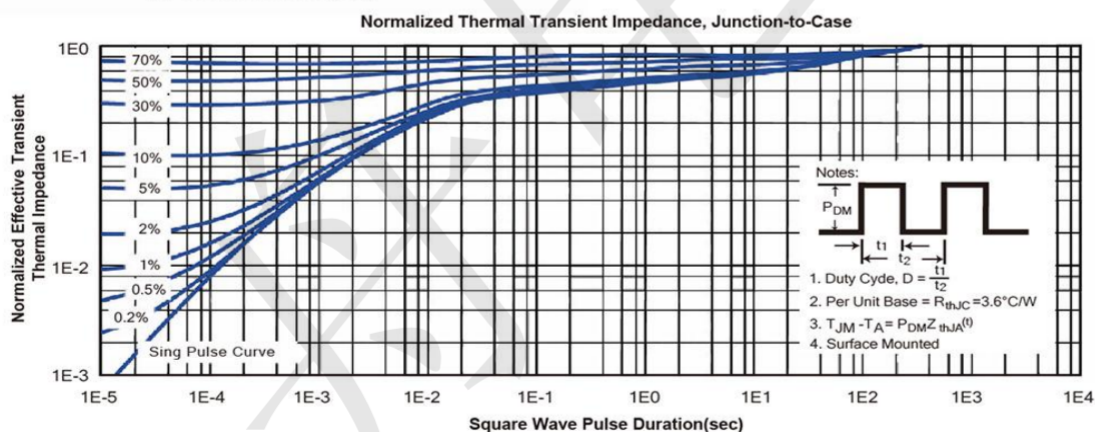
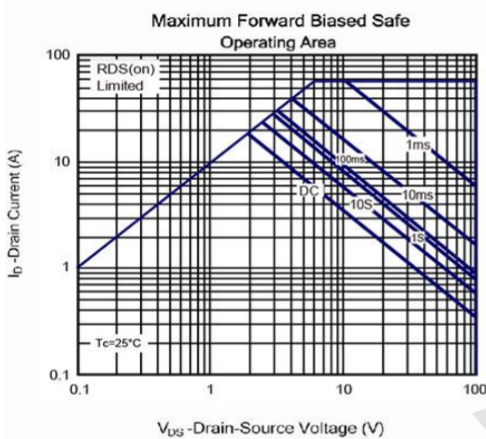
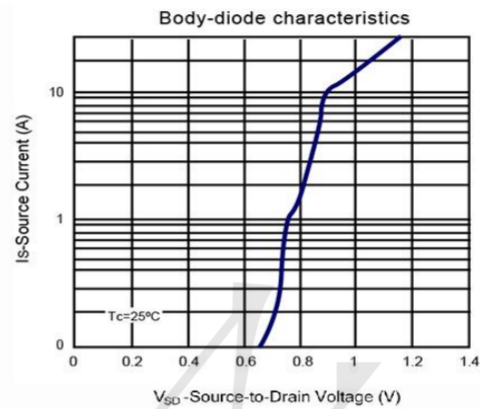
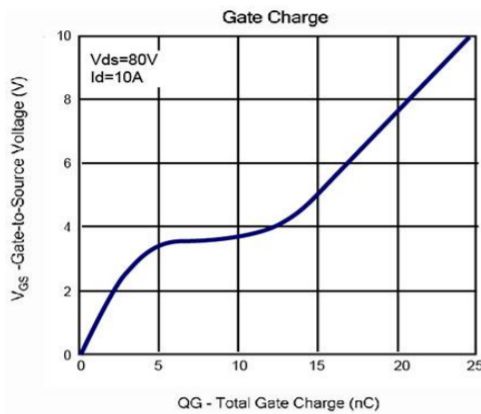
Parameter		Symbol	Maximum Ratings	Unit
Drain-Source Voltage		V _{DS}	100	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current	T _c =25°C	I _D	14.7	A
	T _c =70°C		13.6	
Pulsed Drain Current		I _{DM}	59	A
Maximum Power Dissipation	T _c =25°C	P _D	34.7	W
	T _c =70°C		22.2	
Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 150	°C
Thermal Resistance-Junction to Case *		R _{θJC}	3.6	°C/W

Electrical Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise specified)

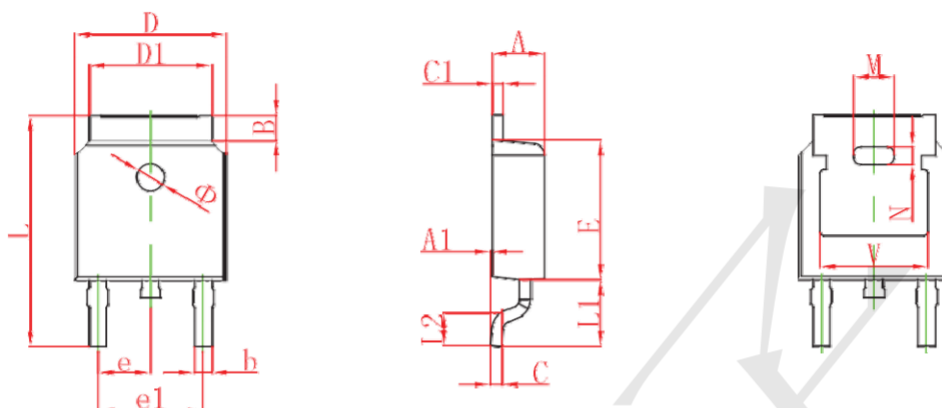
Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	100			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1		3	V
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=80V, V_{GS}=0V$			1	μA
$R_{DS(on)}$	Drain-Source On-Resistance ^a	$V_{GS}=10V, I_D=8A$		80	100	$m\Omega$
V_{SD}	Diode Forward Voltage	$I_S=8A, V_{GS}=0V$		0.9	1.2	V
DYNAMIC						
Q_g	Total Gate Charge	$V_{DS}=80V, V_{GS}=10V, I_D=10A$		24		nC
Q_g	Total Gate Charge	$V_{DS}=80V, V_{GS}=4.5V, I_D=10A$		13		
Q_{gs}	Gate-Source Charge			4.6		
Q_{gd}	Gate-Drain Charge			7.6		
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		882		pF
C_{oss}	Output Capacitance			57		
C_{rss}	Reverse Transfer Capacitance			44		
$t_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V, R_L=5\Omega,$ $V_{GS}=10V, R_G=1\Omega$ $I_D=1A$		14		ns
t_r	Turn-On Rise Time			33		
$t_{d(off)}$	Turn-Off Delay Time			39		
t_f	Turn-Off Fall Time			5		

Typical Electrical and Thermal Characteristic Curves





TO252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
B	0.800	1.400	0.031	0.055
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
c1	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
E	6.000	6.200	0.236	0.244
e	2.286 TYP.		0.090 TYP.	
e1	4.327	4.727	0.170	0.186
M	1.778 REF.		0.070 REF.	
N	0.762 REF.		0.018 REF.	
L	9.800	10.400	0.386	0.409
L1	2.9 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
V	4.830 REF.		0.190 REF.	
⌀	1.100	1.300	0.043	0.0±1