



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	95mΩ@10V	9.6A

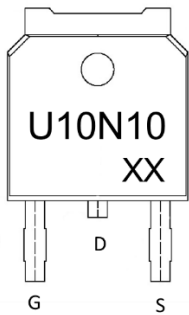
Feature

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

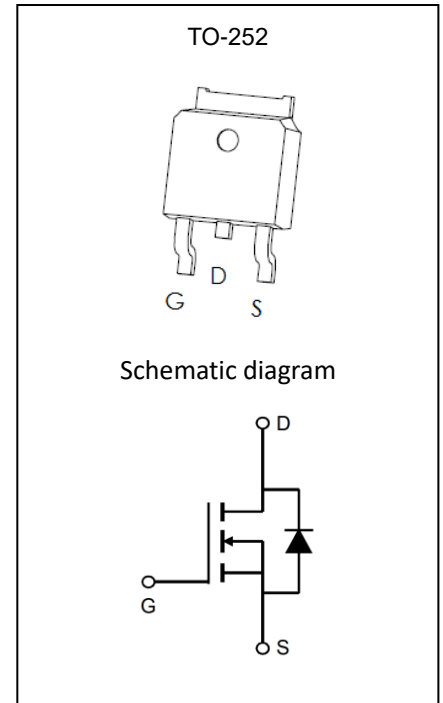
Application

- Power switching application

MARKING:



U10N10 = Device Code
XX = Date Code



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	9.6	A
Pulsed Drain Current	I_{DM}	38.4	A
Single Pulsed Avalanche Energy ¹	E_{AS}	150	mJ
Power Dissipation	P_D	1.25	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

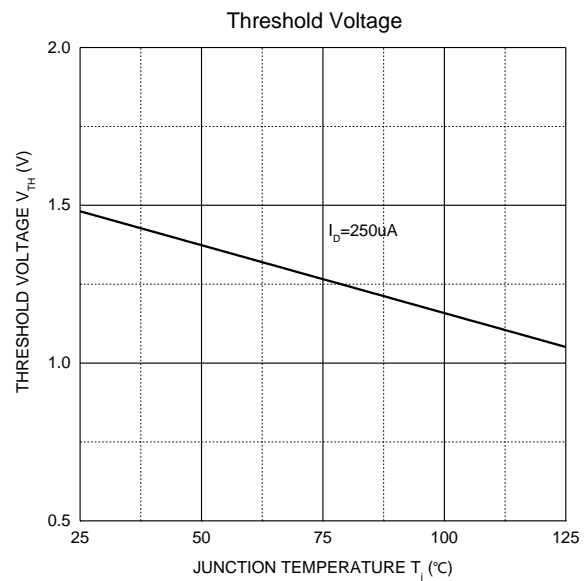
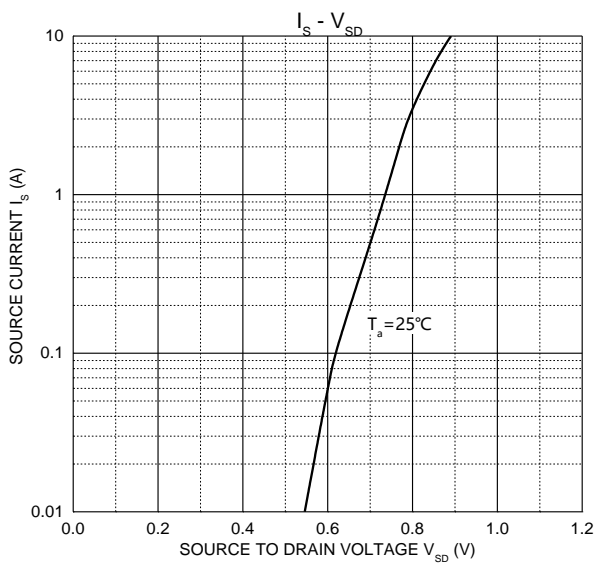
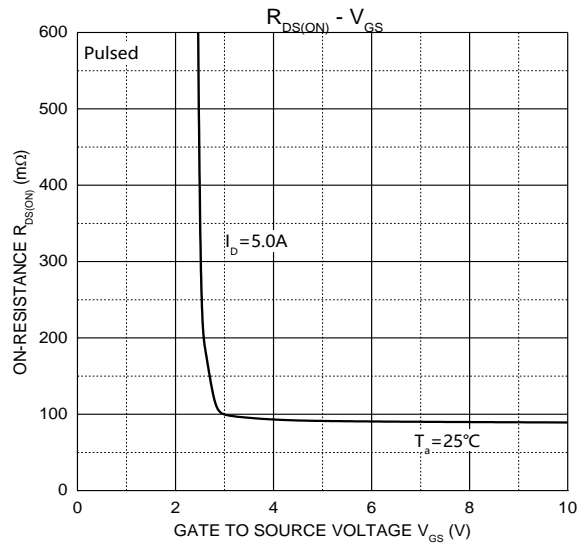
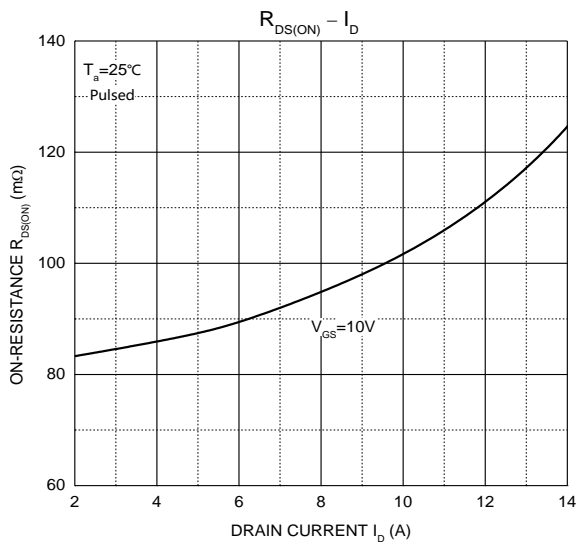
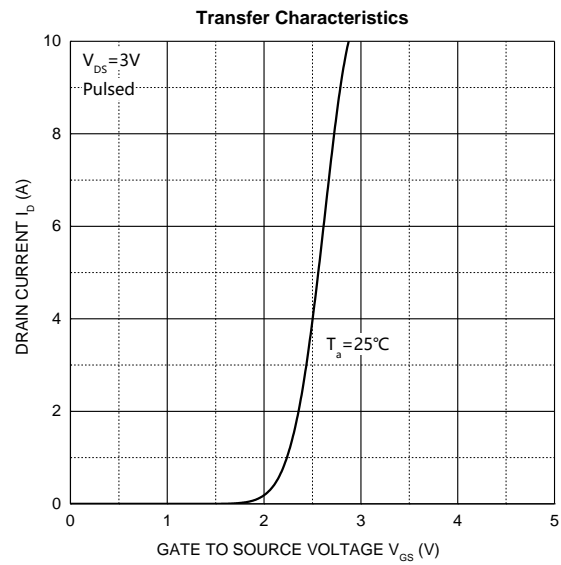
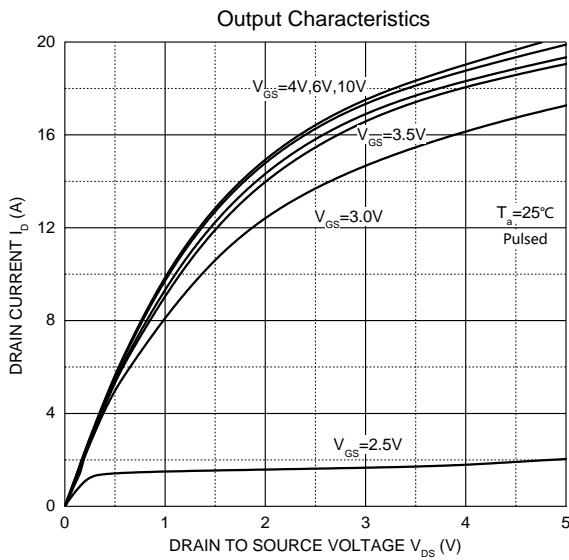
MOSFET ELECTRICAL CHARACTERISTICS($T_C=25^\circ\text{C}$ unless otherwise noted)

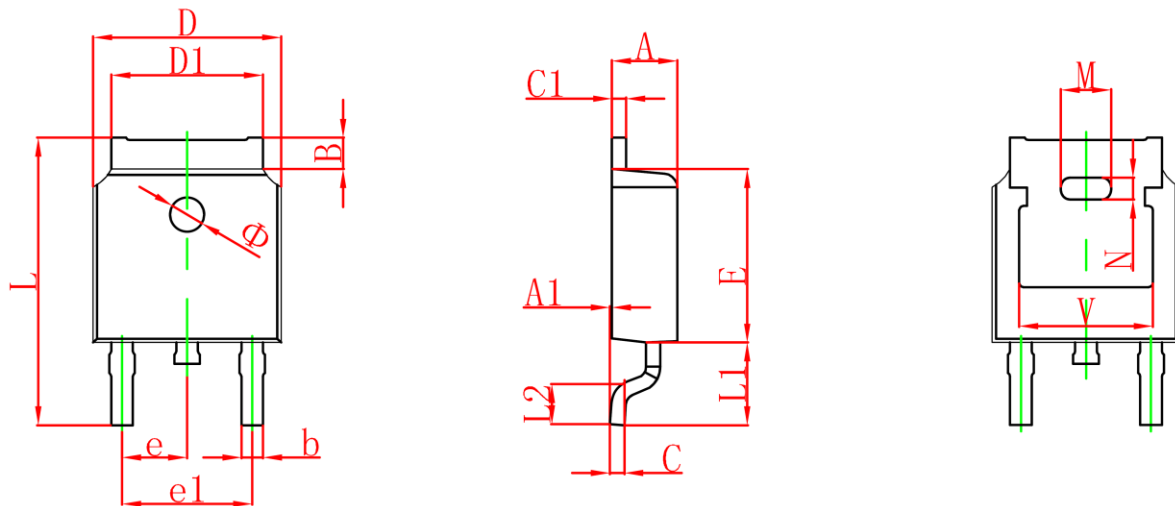
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage ²	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.2	1.5	2.5	V
Drain-source on-resistance ²	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 8A$		95	120	m Ω
Dynamic characteristics³						
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		700		pF
Output Capacitance	C_{oss}			125		
Reverse Transfer Capacitance	C_{rss}			93		
Switching Characteristics³						
Total Gate Charge@10V	Q_g	$V_{DS} = 30V, V_{GS} = 10V, I_D = 3A$		16		nC
Gate-Source Charge	Q_{gs}			3.6		
Gate-Drain Charge	Q_{gd}			4.9		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 30V, V_{GS} = 10V, R_G = 2.5\Omega, I_D = 2A, R_L = 15\Omega$		12		ns
Turn-on rise time	t_r			7.6		
Turn-off delay time	$t_{d(off)}$			37		
Turn-off fall time	t_f			9.6		
Diode Characteristics²						
Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 9A,$		0.86	1.2	V

Note :

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

Typical Electrical and Thermal Characteristics



TO-252 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	1.778REF.		0.070REF.	
N	0.762REF.		0.018REF.	
L	9.800	10.400	0.386	0.409
L1	2.9REF.		0.114REF.	
L2	1.400	1.700	0.055	0.067
V	4.830 REF.		0.190 REF.	
Φ	1.100	1.300	0.043	0.051