

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	110mΩ@10V	5A

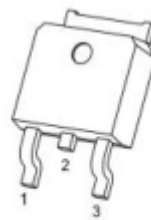
Feature

- V_{DS} 100V
- I_D 5A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) < 140 mohm

Application

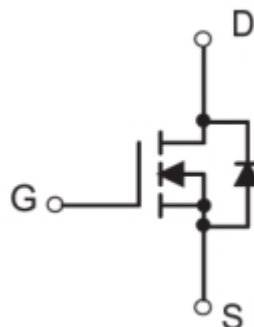
- Consumer electronic power supply
- Motor control
- Synchronous-rectification
- Isolated DC/DC convertor
- Invertors

Package

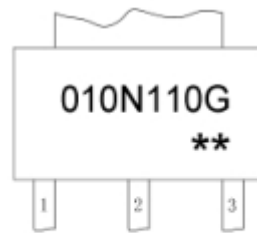


TO-252(1:G 2:D 3:S)

Circuit diagram



Marking



010N110G =Device Code
**** =Week Code**

Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	100	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous	I _D	5	W
Drain Current – Pulsed ¹	I _{DM}	20	A
Power Dissipation (T _c =25°C)	P _D	55	W
Thermal Resistance Junction to ambient	R _{θJA}	2.7	°C/ W
Storage Temperature Range	T _{STG}	-55~ +150	°C
Operating Junction Temperature Range	T _J	-55~ +150	°C

Electrical characteristics

($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	100	110		V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =100V,V _{GS} = 0V			1	uA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.8	2.5	V
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ±20V , V _{DS} =0V			100	uA
Static Drain-Source on-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =3A		110	140	mΩ
		V _{GS} =4.5V, I _D =2A		160	300	
Dynamic characteristics ⁴						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =3.0A		4.3		nC
Gate-Source Charge	Q _{gS}			1.5		
Gate-Drain Charge	Q _{gd}			1.1		
Turn-On Delay Time	T _{d(on)}	V _{GS} =10V, V _{DD} =50V, I _D =3.0A, R _{GEN} =2Ω		14.7		nS
Rise Time	T _r			3.5		
Turn-Off Delay Time	T _{d(off)}			20.9		
Fall Time	T _f			2.7		
Input Capacitance	C _{iss}	V _{DS} =50V,V _{GS} =0V, f=1MHz		206		pF
Output Capacitance	C _{oss}			29		
Reverse Transfer Capacitance	C _{rss}			3.3		
Drain-Source Diode Characteristics						
Continuous Source Current	I _S	V _G =V _D =0V , Force Current			8	A
Diode forward voltage	V _{SD}	V _{GS} =0V, I _S =3A , T _J =25℃			1.2	V

Typical Characteristics

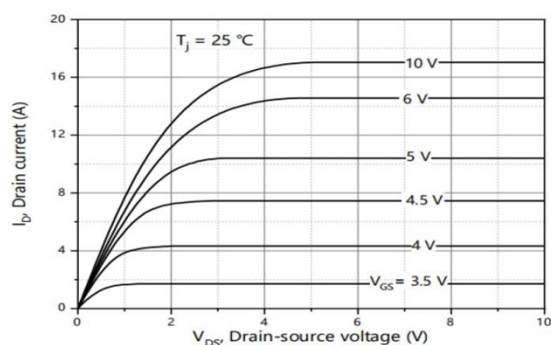


Figure1. Output Characteristics

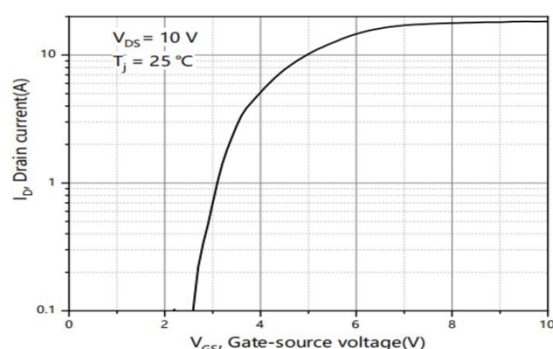


Figure2. Transfer Characteristics

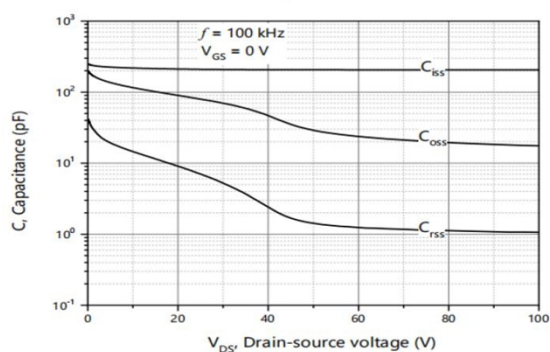


Figure3. Capacitance Characteristics

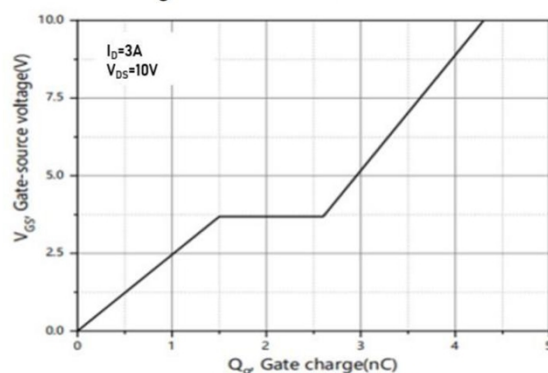


Figure4. Gate Charge

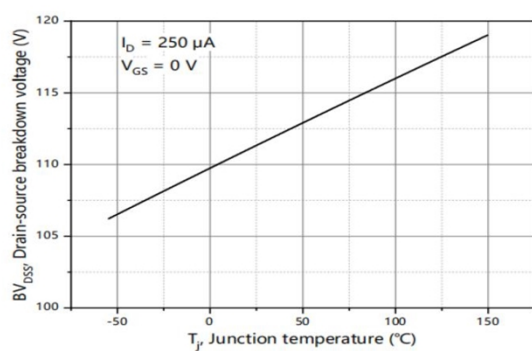


Figure5. Drain-Source breakdown voltage

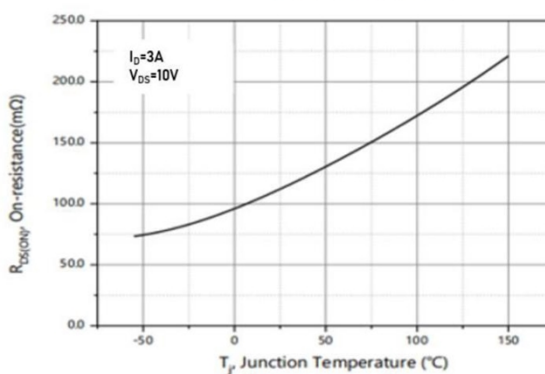


Figure6. Drain-Source on Resistance

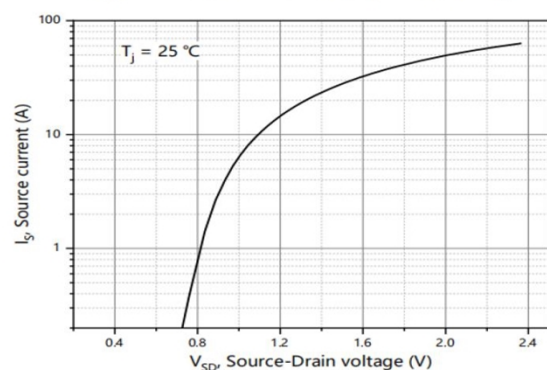


Figure7. Forward characteristic of body diode

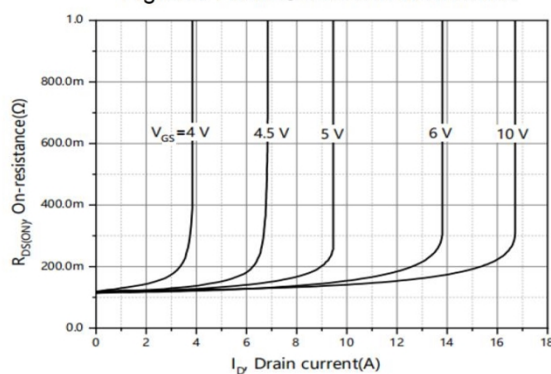


Figure8. Drain-source on-state resistance

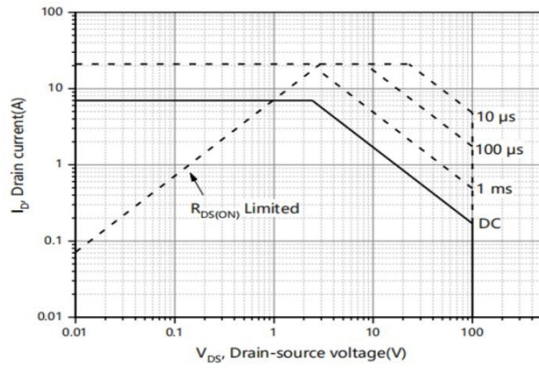


Figure9. Safe Operation Area $T_A=25\text{ }^{\circ}\text{C}$

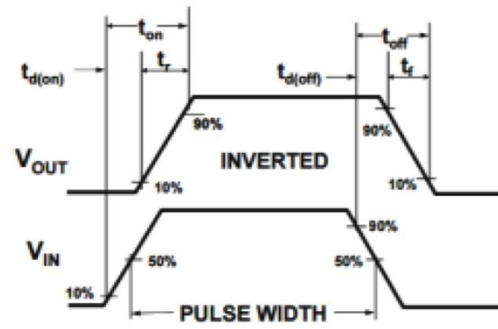
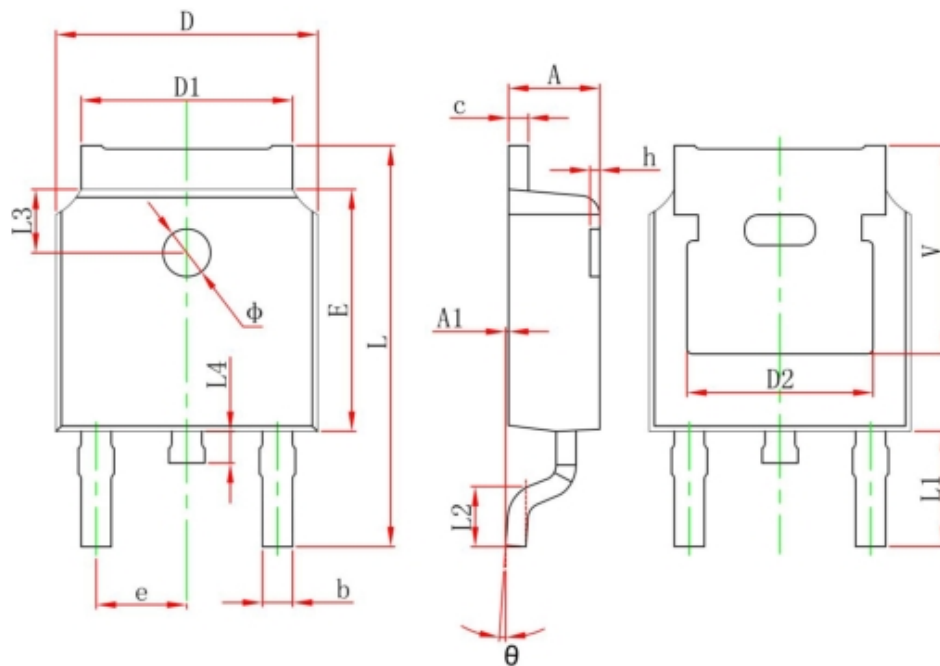


Figure10. Switching wave

TO-252-2L(4R) Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	