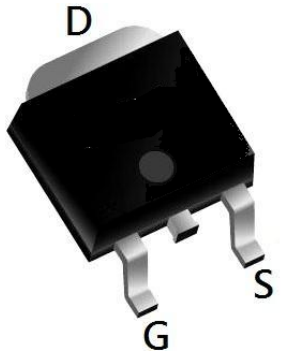
N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
800V	13.5Ω@10V	1A



GENERAL DESCRIPTION

The UMW 1N80 is an N-channel mode power MOSFET using advanced technology to provide costomers with planar stripe. This technology specializes in allowing a minimum on-state resistance and superior switching performance. It also can withstand high energy pulse in the avalanche and commutation mode. The UMW 1N80 is universally applied in high efficiency switch mode power supply.

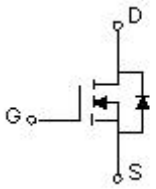
FEATURE

- Excellent package for good heat dissipation
- High switching speed
- 100% avalanche tested

APPLICATION

- Power switching application
- DC/DC converters

EQUIVALENT CIRCUIT



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	800	V
Gate-Source Voltage	V_{GS}	±30	
Continuous Drain Current	I_D	1	A
Pulsed Drain Current	I_{DM}	4	
Single Pulsed Avalanche Energy (note1)	E_{AS}	90	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55 ~+150	
Maximum lead temperure for soldering purposes , 1/8”from case for 5 seconds	T_L	260	

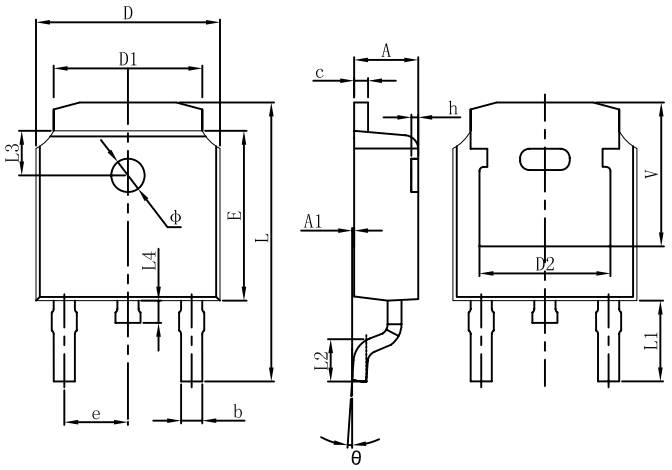
Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	800			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =800V, V_{GS} =0V			10	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±30V			±100	nA
On characteristics						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	3		5	V
Static drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =0.5A			13.5	Ω
Forward transconductance (note2)	g_{fs}	V_{DS} =50V, I_D =0.5A		0.75		S
Dynamic characteristics (note 3)						
Input capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V,f =1MHz			195	pF
Output capacitance	C_{oss}				26	
Reverse transfer capacitance	C_{rss}				3.5	
Switching characteristics (note 2,3)						
Turn-on delay time	$t_{d(on)}$	V_{DD}=400V, R_G=25Ω, I_D =1A			30	ns
Turn-on rise time	t_r				60	
Turn-off delay time	$t_{d(off)}$				40	
Turn-off fall time	t_f				60	
Total Gate Charge	Q_g	V_{DS} =640V,V_{GS} =10V,I_D =1A			7.2	nC
Gate-Source Charge	Q_{gs}			1.1		nC
Gate-Drain Charge	Q_{gd}			3.3		nC
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V_{SD}	V_{GS} = 0V, I_S =1A			1.4	V
Continuous drain-source diode forward current	I_S				1	A
Pulsed drain-source diode forward current	I_{SM}				4	A

Notes :

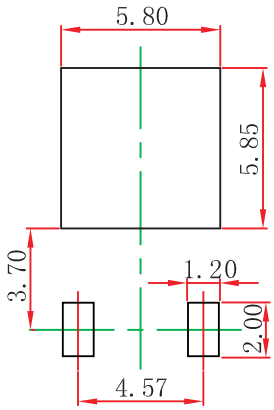
1. I_L=1A, V_{DD}=50V, R_G=25Ω,Starting T_J=25℃.
2. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
3. Guaranteed by design, not subject to production

TO-252-2L Package Outline Dimensions



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	0.635	0.770	0.025	0.030
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	9.712	10.312	0.382	0.406
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	5.250 REF.		0.207 REF.	

TO-252-2L Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.