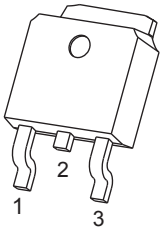
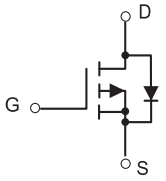
-40V/-40A P-Channel MOSFET

Product Summary

BVDSS	-40.0	V
ID	-40.0	A
RDSON@VGS=-10V	11.0	mΩ

TO-252





1. GATE
2. DRAIN
3. SOURCE

Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested

Application

- Power Switching Application

Ordering Information:

Product	Package	Marking	Packing
M04P40LG	TO-252	U40P04	3000PCS/Reel

ABSOLUTE MAXIMUM RATINGS (T_A = 25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	-40	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current[1]	T_C = 25℃	I_D	-40	A
	T_C = 100℃	I_D	-28	A
Pulsed Drain Current[2]		I_{DM}	-160	A
Single Pulsed Avalanche Current[3]		I_{AS}	-32	A
Single Pulsed Avalanche Energy[3]		E_{AS}	512	mJ
Power Dissipation[5]	T_C = 25℃	P_D	52	W
Thermal Resistance from Junction to Ambient[6]		$R_{\theta JA}$	50	℃/W
Thermal Resistance from Junction to Case		$R_{\theta JC}$	2.4	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{STG}	-55~ +150	℃

-40V/-40A P-Channel MOSFET

MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = -250μA	-40			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -40V, V_{GS} = 0V			-1	μA
Gate - Body Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
On Characteristics[4]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-1.0	-2.0	-3.0	V
Drain-source On-resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -12A		11	14	mΩ
Forward Transconductance	g_{FS}	V_{DS} = -5V, I_D = -12A	24			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = -20V, V_{GS} = 0V, f = 1MHz		4155		pF
Output Capacitance	C_{oss}			321		
Reverse Transfer Capacitance	C_{rss}			300		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		4.4		Ω
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = -20V, V_{GS} = -10V, I_D = -12A		83		nC
Gate-source Charge	Q_{gs}			18		
Gate-drain Charge	Q_{gd}			14		
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = -20V, V_{GS} = -10V, I_D= -20A, R_G = 3Ω		11		ns
Turn-on Rise Time	t_r			19		
Turn-off Delay Time	$t_{d(off)}$			40		
Turn-off Fall Time	t_f			26		
Source - Drain Diode Characteristics						
Diode Forward Voltage[4]	V_{SD}	V_{GS} = 0V, I_S = -10A			-1.2	V

Notes :

1.The maximum current rating is limited by package.And device mounted on a large heatsink

2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.

3.E_{AS} condition: V_{DD} = -20V,V_{GS} = -10V, L = 1mH, R_G = 25Ω Starting T_J = 25°℃.

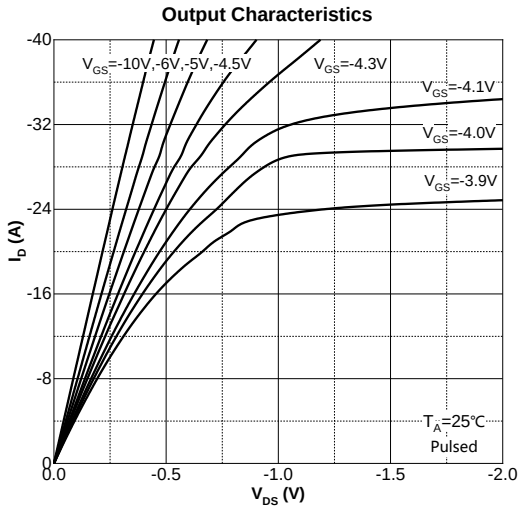
4.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.

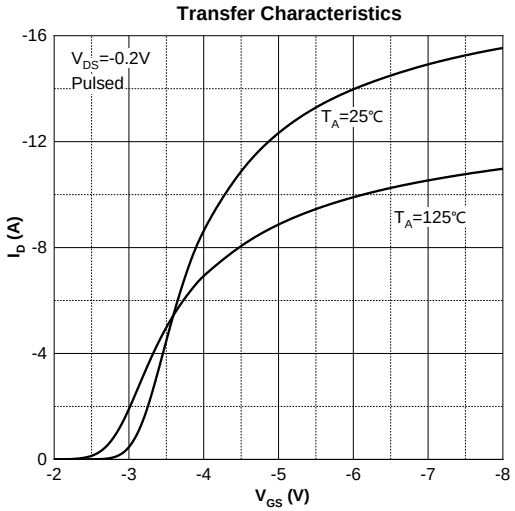
5.The power dissipation P_D is limited by $T_{J(MAX)}$ = 150°C.And device mounted on a large heatsink

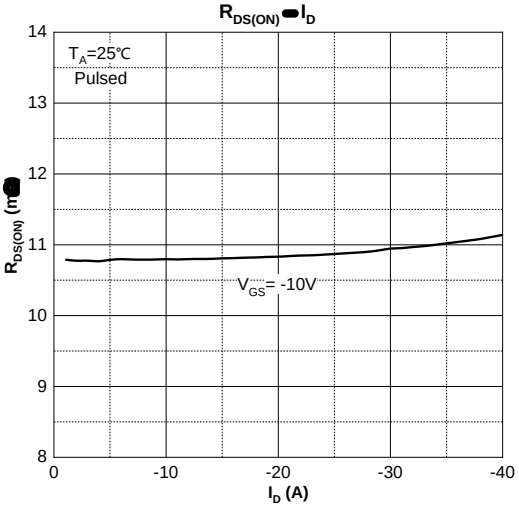
6.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

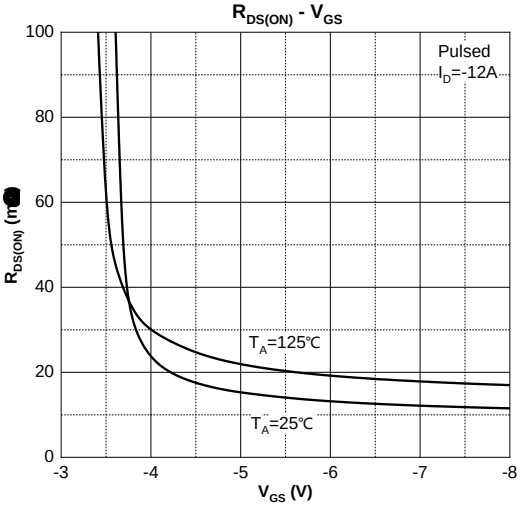
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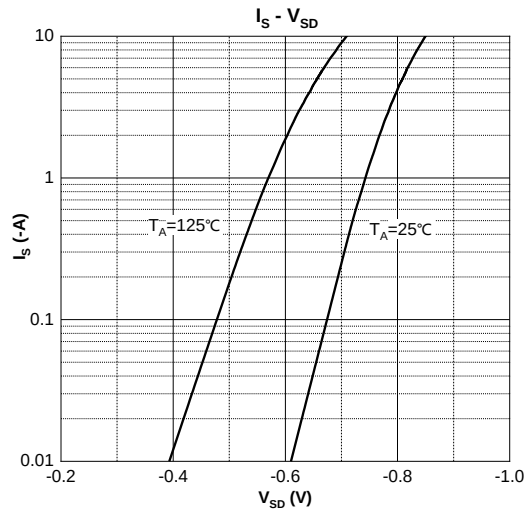
Typical Characteristics

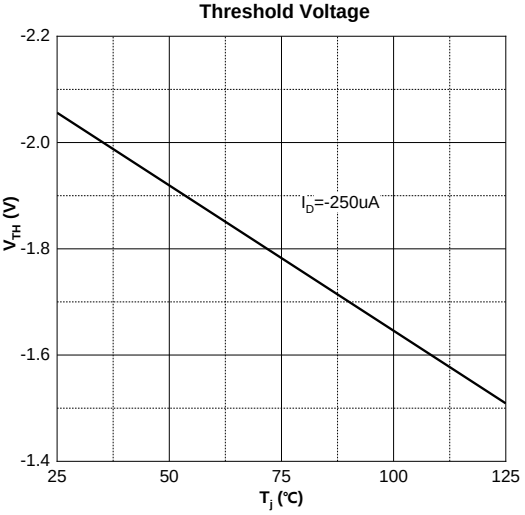




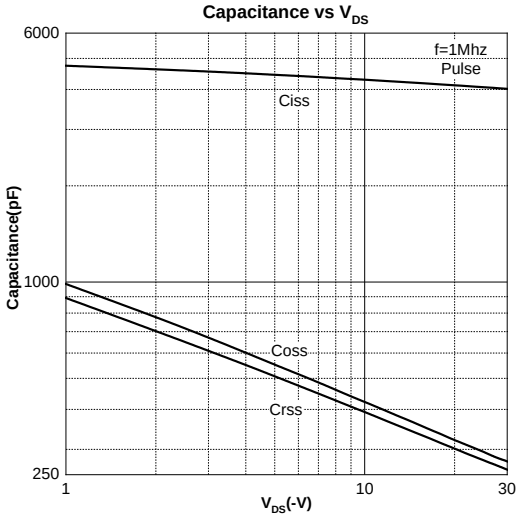


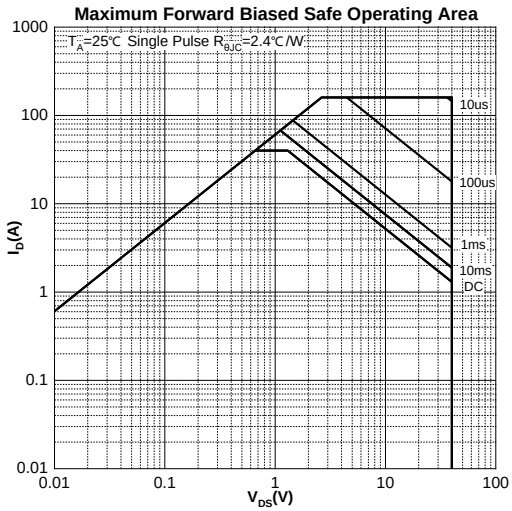


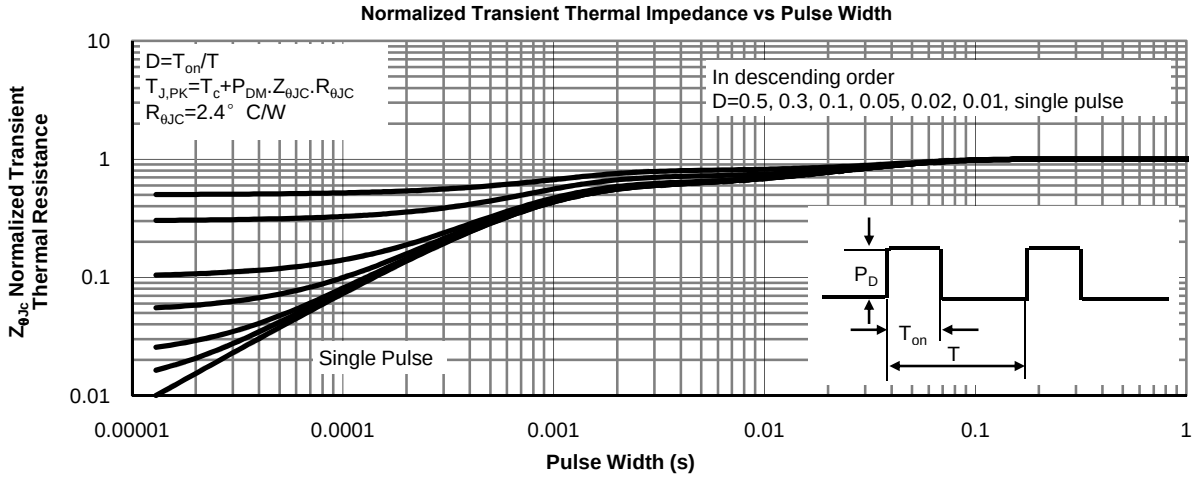




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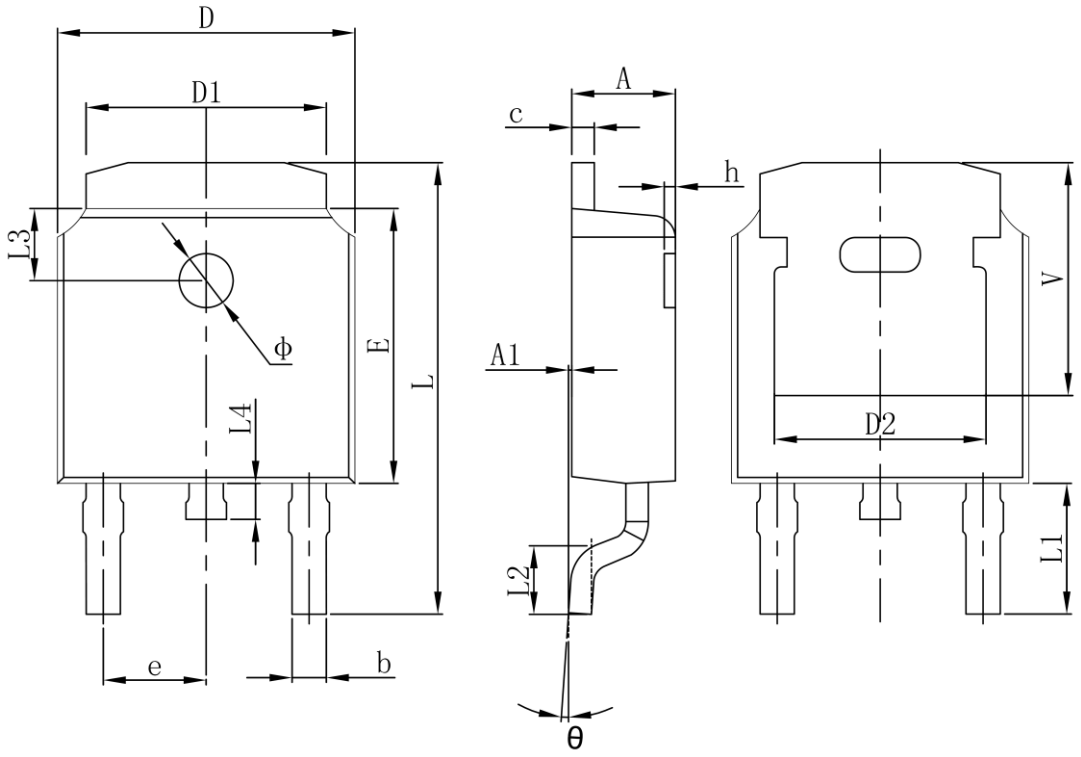






-40V/-40A P-Channel MOSFET

TO-252-2L 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	0.635	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	4.830REF		0.190REF	
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	2.900REF		0.114REF	
L2	1.400	1.700	0.055	0.067
L3	1.600REF		0.063REF	
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	5.250REF		0.207REF	