

20V N-Channel MOSFET

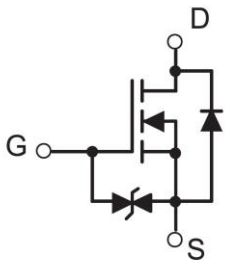
Description

The PME20N08M uses advanced Trench technology and designs to provide excellent $R_{DS(on)}$ with low gate charge. This device is suitable for use in PWM, load switching and general purpose applications.

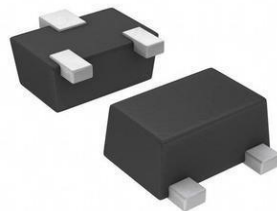
Features

- Surface Mount Package
- N-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- ESD Protected

Dimensions and Pin Configuration



Circuit diagram

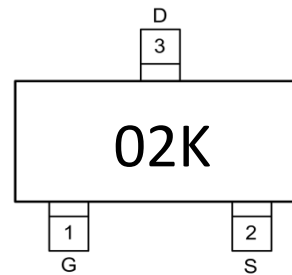


SOT-723

Applications

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

Marking Information



02K =Device Code

MOSFET Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	380mΩ @4.5V	0.75A
	450mΩ @2.5V	
	800mΩ @1.8V	

Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise noted)

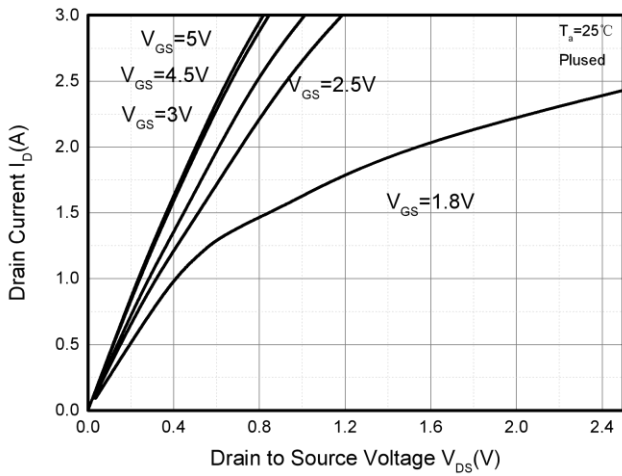
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	0.75	A
Pulsed Drain Current	I_{DM}	1.8	A
Power Dissipation	P_D	0.15	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

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

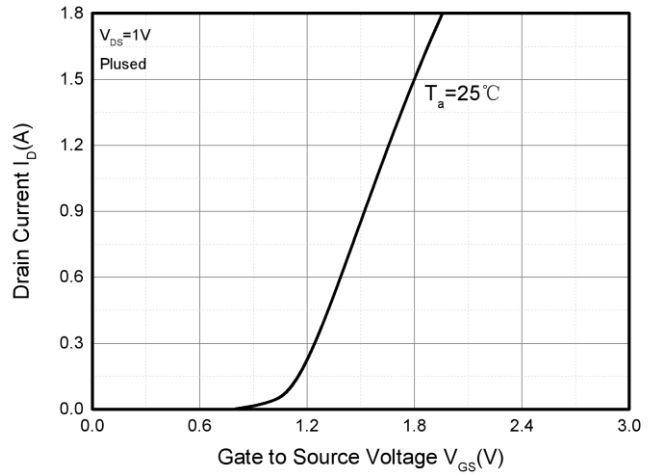
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 10	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.3	0.65	1	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 0.5A$		0.25	0.38	Ω
		$V_{GS} = 2.5V, I_D = 0.5A$		0.35	0.45	
		$V_{GS} = 1.8V, I_D = 0.5A$		0.4	0.8	
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 16V, V_{GS} = 0V,$ $f = 1MHz$		79	120	μF
Output Capacitance	C_{oss}			13	20	
Reverse Transfer Capacitance	C_{rss}			9	15	
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 4.5V, V_{DS} = 10V,$ $I_D = 500mA, R_{GEN} = 10\Omega$		6.7		ns
Turn-on rise time	t_r			4.8		
Turn-off delay time	$t_{d(off)}$			17.3		
Turn-off fall time	t_f			7.4		
Source-Drain Diode characteristics						
Body Diode Voltage	V_{SD}	$I_S = 0.5A, V_{GS} = 0V$		0.7	1.3	V

Typical Characteristics

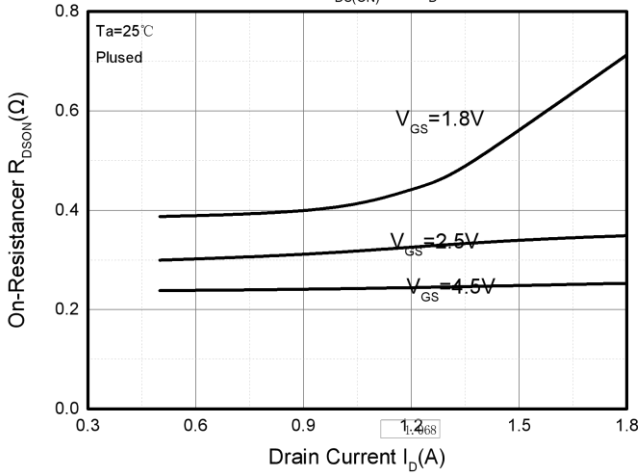
Output Characteristics



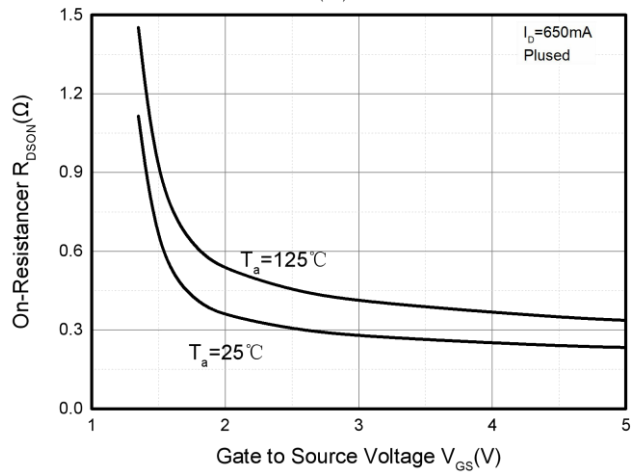
Transfer Characteristics



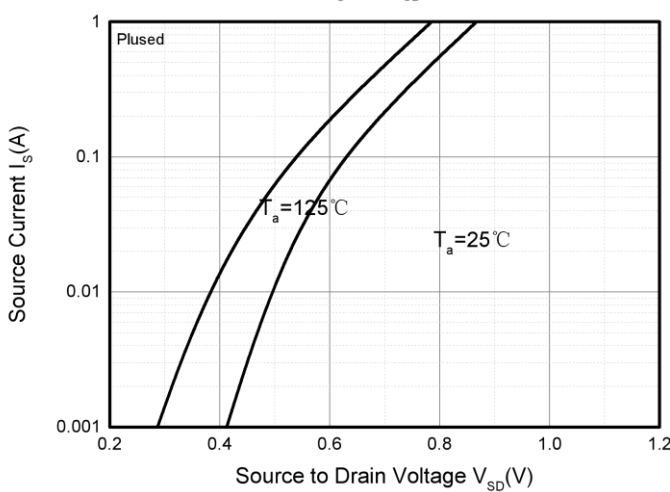
$R_{DS(ON)} - I_D$



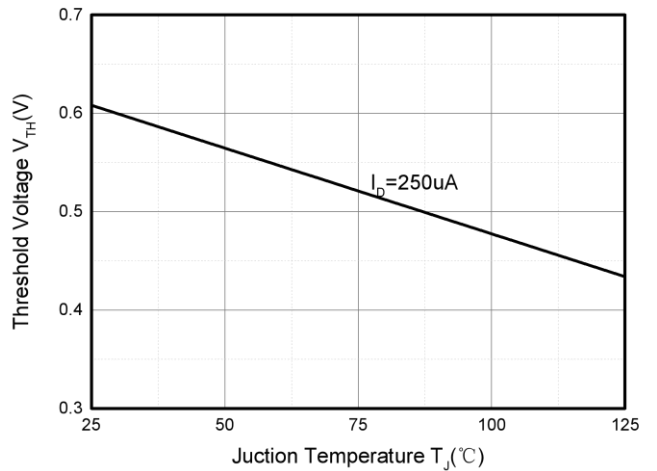
$R_{DS(ON)} - V_{GS}$



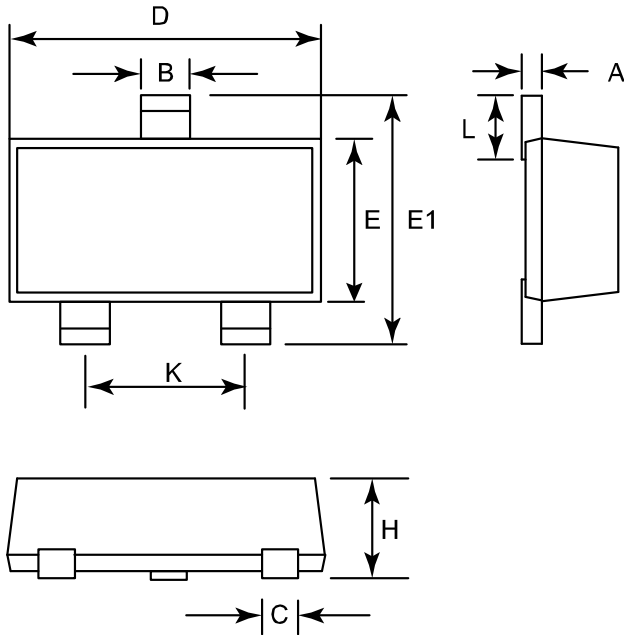
$I_S - V_{SD}$



Threshold Voltage

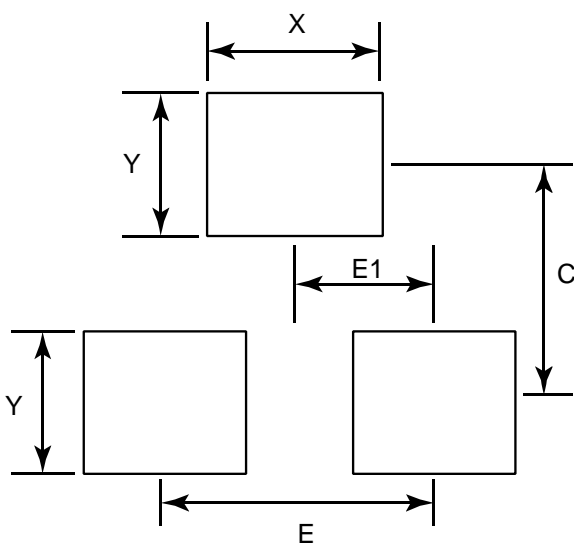


SOT-723 Package Outline Drawing



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.08		0.18
B	0.27		0.37
C	0.17		0.27
D	1.15	1.20	1.25
E	0.75	0.80	0.85
E1	1.15	1.20	1.25
K	0.75	0.80	0.85
L	0.25		0.30
H	0.43		0.55

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	1.00	0.04
E	0.80	0.03
E1	0.40	0.016
X	0.65	0.026
Y	0.60	0.024