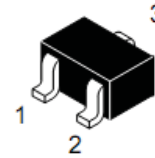


WPM2026

Single P-Channel, -20V, -3.2A, Power MOSFET

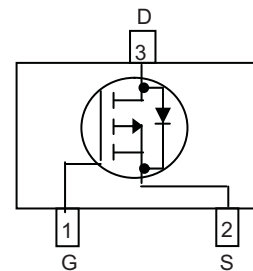
V _{DS} (V)	R _{ds(on)} (Ω)
-20	0.056@ V _{GS} = - 4.5V
	0.069@ V _{GS} = - 2.5V
	0.086@ V _{GS} = - 1.8V



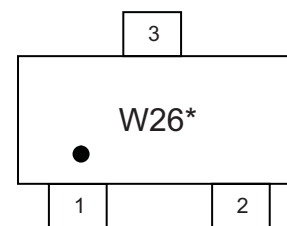
SOT-23

Descriptions

The WPM2026 is P-Channel enhancement MOS Field Effect Transistor. Uses advanced trench technology and design to provide excellent R_{DS (ON)} with low gate charge. This device is suitable for use in DC-DC conversion, power switch and charging circuit. Standard Product WPM2026 is Pb-free.



Pin configuration (Top view)



W26= Device Code
* = Month (A~Z)

Marking

Features

- Trench Technology
- Supper high density cell design
- Excellent ON resistance for higher DC current
- Extremely Low Threshold Voltage
- Small package SOT-23

Applications

- Driver for Relay, Solenoid, Motor, LED etc.
- DC-DC converter circuit
- Power Switch
- Load Switch
- Charging

Order information

Device	Package	Shipping
WPM2026-3/TR	SOT-23	3000/Reel&Tape

Absolute Maximum ratings

Parameter		Symbol	10 S	Steady State	Unit
Drain-Source Voltage		V_{DS}	-20		V
Gate-Source Voltage		V_{GS}	± 12		
Continuous Drain Current ^a	$T_A=25^\circ\text{C}$	I_D	-3.2	-2.9	A
	$T_A=70^\circ\text{C}$		-2.6	-2.3	
Maximum Power Dissipation ^a	$T_A=25^\circ\text{C}$	P_D	0.9	0.8	W
	$T_A=70^\circ\text{C}$		0.6	0.5	
Continuous Drain Current ^b	$T_A=25^\circ\text{C}$	I_D	-2.9	-2.7	A
	$T_A=70^\circ\text{C}$		-2.3	-2.1	
Maximum Power Dissipation ^b	$T_A=25^\circ\text{C}$	P_D	0.7	0.6	W
	$T_A=70^\circ\text{C}$		0.5	0.4	
Pulsed Drain Current ^c		I_{DM}	-12		A
Operating Junction Temperature		T_J	150		$^\circ\text{C}$
Lead Temperature		T_L	260		$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55 to 150		$^\circ\text{C}$

Thermal resistance ratings

Parameter		Symbol	Typical	Maximum	Unit
Junction-to-Ambient Thermal Resistance ^a	$t \leq 10 \text{ s}$	$R_{\theta JA}$	105	130	$^\circ\text{C/W}$
	Steady State		120	155	
Junction-to-Ambient Thermal Resistance ^b	$t \leq 10 \text{ s}$	$R_{\theta JA}$	130	160	
	Steady State		145	190	
Junction-to-Case Thermal Resistance		$R_{\theta JC}$	40	60	

a Surface mounted on FR4 Board using 1 square inch pad size, 1oz copper

b Surface mounted on FR4 board using minimum pad size, 1oz copper

c Repetitive rating, pulse width limited by junction temperature, $t_p=10\mu\text{s}$, Duty Cycle=1%

d Repetitive rating, pulse width limited by junction temperature $T_J=150^\circ\text{C}$.

Electronics Characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-to-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0 V, I _D = -250uA	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -16 V, V _{GS} = 0V			-1	uA
Gate-to-source Leakage Current	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±12V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} = V _{DS} , I _D = -250uA	-0.35	-0.6	-1.0	V
Drain-to-source On-resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -3.2A		56	65	mΩ
		V _{GS} = -2.5V, I _D = -2.8A		69	81	
		V _{GS} = -1.8V, I _D = -2.3A		86	110	
Forward Transconductance	g _{FS}	V _{DS} = -5 V, I _D = -3.6A		10		S
CHARGES, CAPACITANCES AND GATE RESISTANCE						
Input Capacitance	C _{ISS}	V _{GS} = 0 V, f = 1.0 MHz, V _{DS} = -10 V		1130		pF
Output Capacitance	C _{OSS}			120		
Reverse Transfer Capacitance	C _{RSS}			115		
Total Gate Charge	Q _{G(TOT)}	V _{GS} = -4.5 V, V _{DS} = -10 V, I _D = -2.7A		11		nC
Threshold Gate Charge	Q _{G(TH)}			0.6		
Gate-to-Source Charge	Q _{GS}			1.3		
Gate-to-Drain Charge	Q _{GD}			2.7		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	td(ON)	V _{GS} = -4.5 V, V _{DD} = -10 V, R _L =3.5 Ω, R _G =6 Ω		16		ns
Rise Time	tr			20		
Turn-Off Delay Time	td(OFF)			65		
Fall Time	tf			15		
BODY DIODE CHARACTERISTICS						
Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = -1.0A		-0.62	-1.5	V