



Description

This new generation MOSFET is designed to minimize the on-state resistance ($R_{DS(ON)}$), yet maintain superior switching performance, making it ideal for high-efficiency power management applications.

Applications

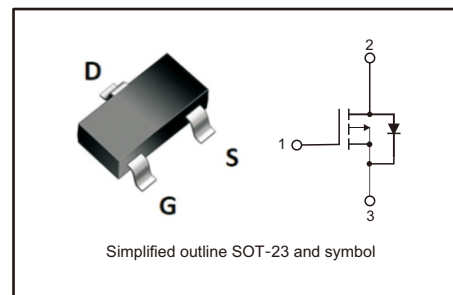
- DC-DC Converters
- Power Management Functions
- Battery Operated Systems and Solid-State Relays
- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories, Transistors, etc.

Features

- Low On-Resistance
- low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Small Surface Mount Package
- Totally Lead-Free & Fully RoHs Compliant(Note 1)
- Halogen and Antimony Free." Green" Device (Note2)

PINNING

PIN	DESCRIPTION
1	GATE
2	DRAIN
3	SOURCE



Absolute Maximum Ratings (TA=25°C, unless otherwise specified)

Parameter	Symbols	Ratings	Units
Drain-Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D	-4.5	A
Power Dissipation	P_D	1.04	W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	120	°C/W
Operation Junction Temperature And Storage Temperature	T_j, T_{stg}	-55 ~ +150	°C

Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. Halogen-and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br +Cl) and <1000ppm antimony compounds.

Electrical Characteristics (TA=25°C, unless otherwise specified)

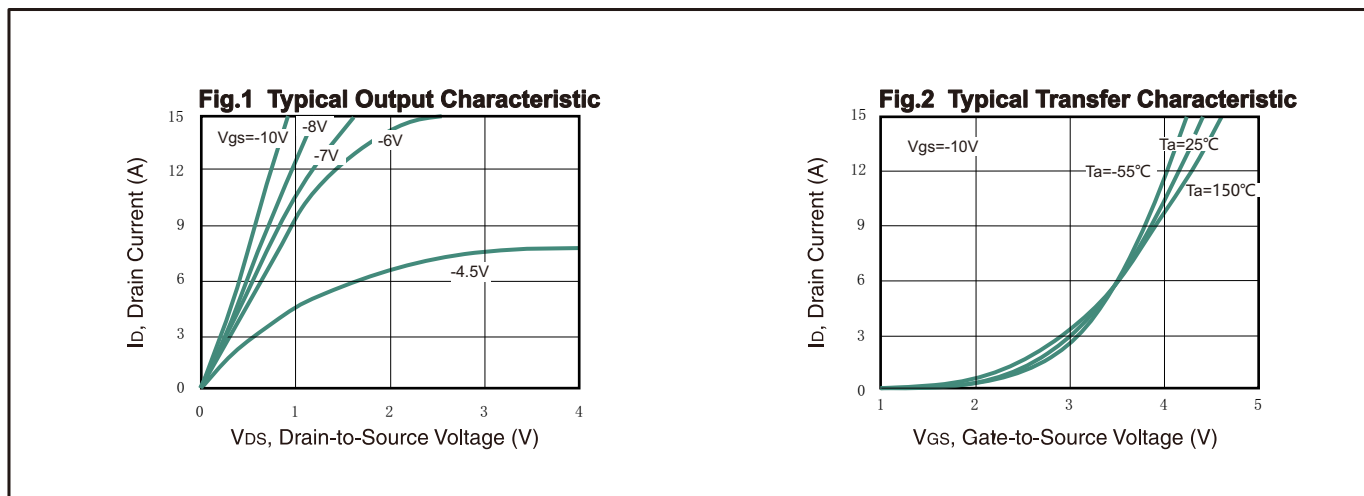
Parameter Units	Symbols	Test Conditions	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	B_{VDSS}	$V_{GS} = 0V, I_D = 250\mu A$	-30			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
Gate- Source Leakage Current	Forward	I_{GSS}			0.1	μA
	Reverse				$V_{GS} = -20V, V_{DS} = 0V$	



Electrical Characteristics (TA=25°C, unless otherwise specified)

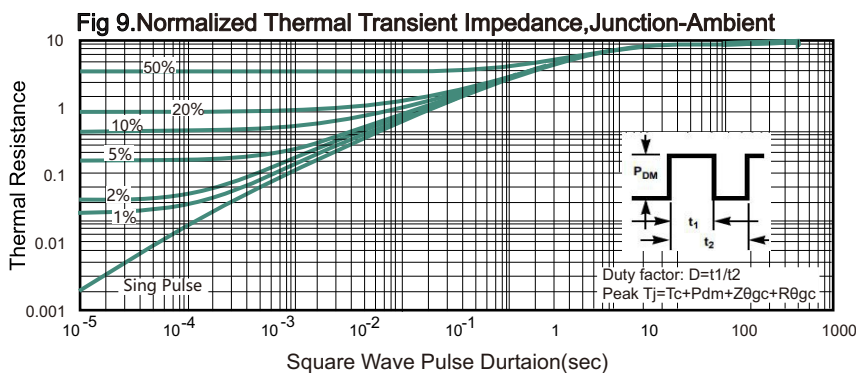
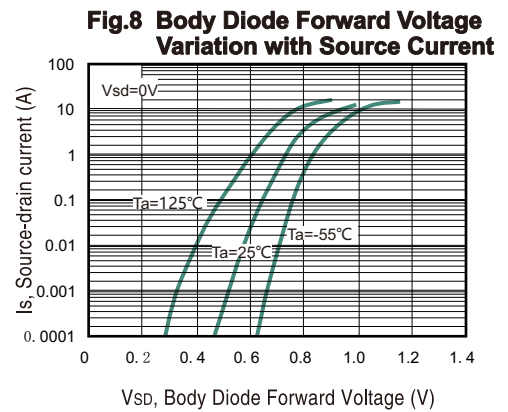
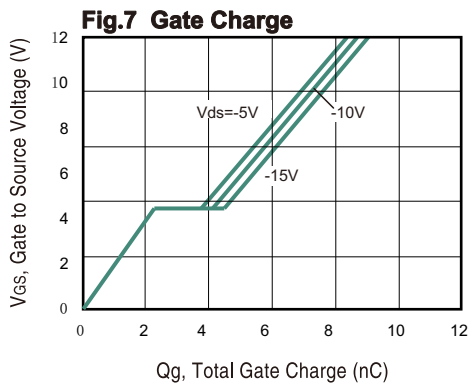
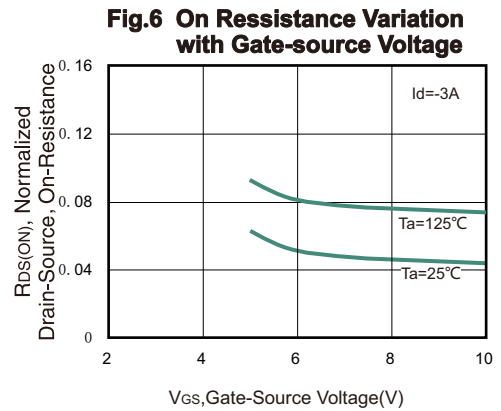
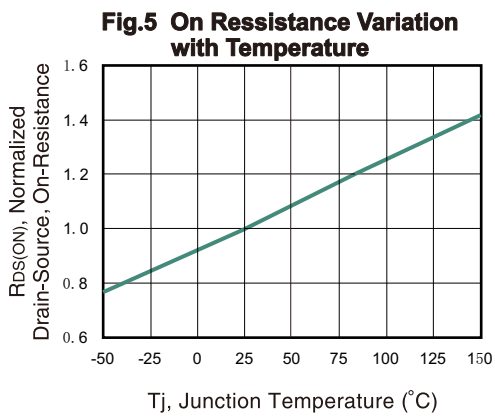
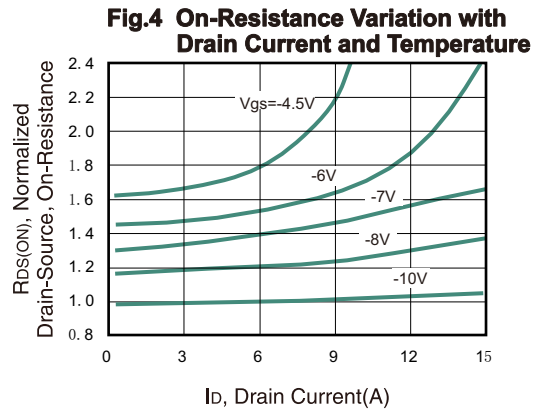
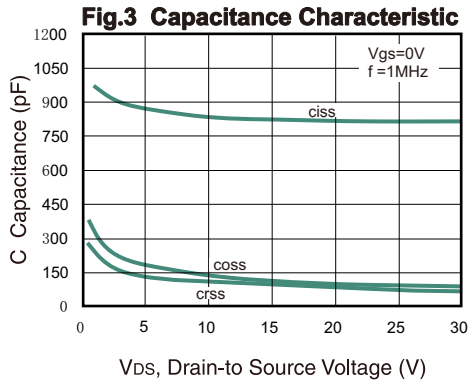
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.5	-3	V
Static Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -4.5A$		42	50	mΩ
		$V_{GS} = -4.5V, I_D = -3.5A$		66	85	
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -4.5A$		16		S
Dynamic Characteristics						
Input Capacitance	C_{ISS}	$V_{DS} = -15V$ $V_{GS} = 0V$ $f = 1.0MHz$		820		pF
Output Capacitance	C_{OSS}			122		
Reverse Transfer Capacitance	C_{RSS}			97		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -15V$ $V_{GS} = -10V$ $I_D = -4.5A$		9		nC
Gate-Source Charge	Q_{gs}			2.2		
Gate-Drain Charge	Q_{gd}			2.5		
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = -15V,$ $R_S = 6\Omega,$ $I_D = -1A$ $V_{DS} = -10V$		12		ns
Turn-On Rise Time	t_{rr}			16		
Turn-Off Delay Time	$t_{d(off)}$			34		
Turn-Off Fall Time	t_f			20		
Body Diode Characteristics						
Drain-Source Diode Forward Voltage	V_{SD}	$I_S = I_F; V_{GS} = 0V$			-1.2	V
Diode Forward Current	I_S				-3	A
Pulsed Current	I_{SM}				-12	A

TYPICAL ELECTRICAL CHARACTERISTICS



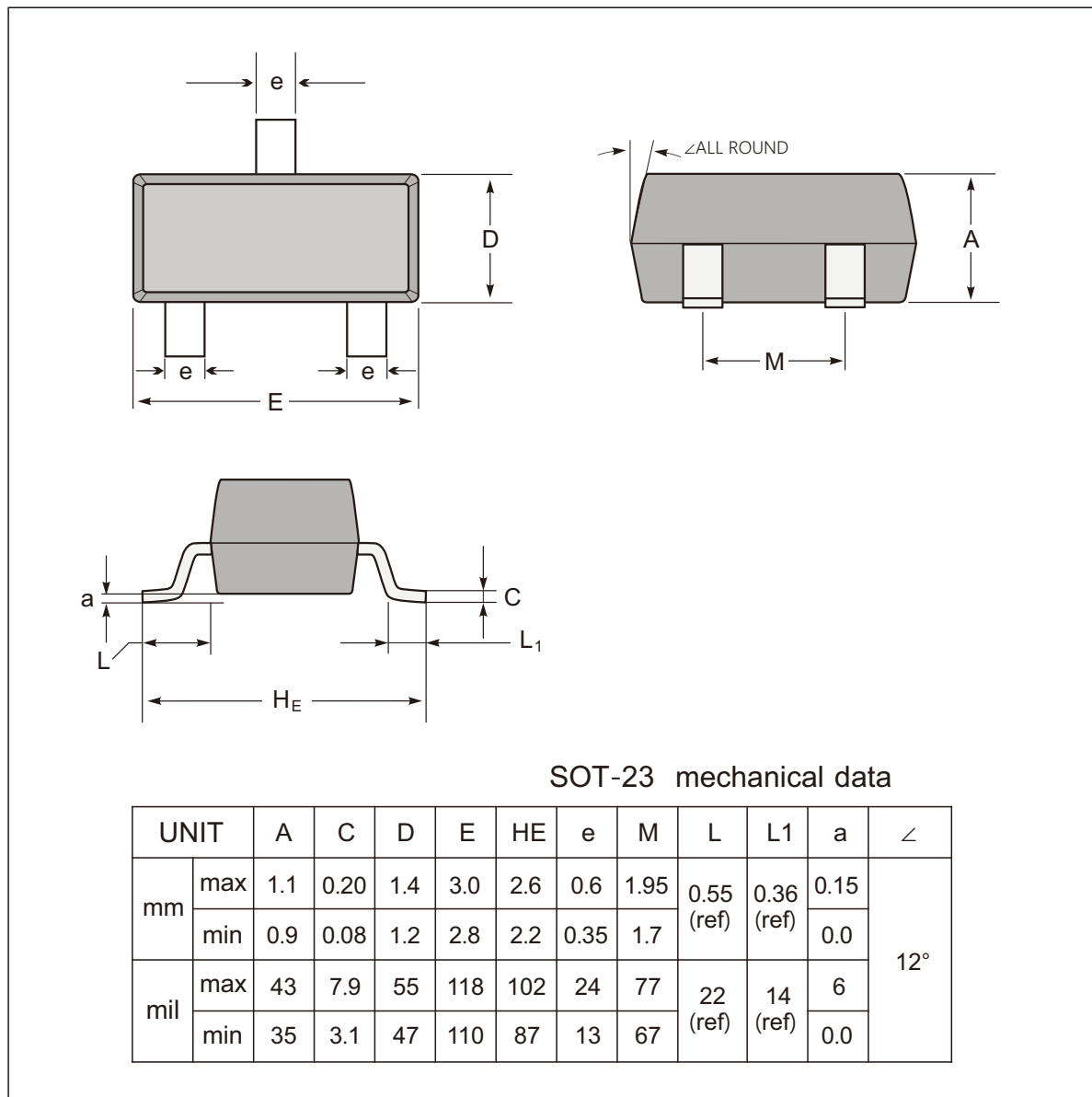


TYPICAL ELECTRICAL CHARACTERISTICS

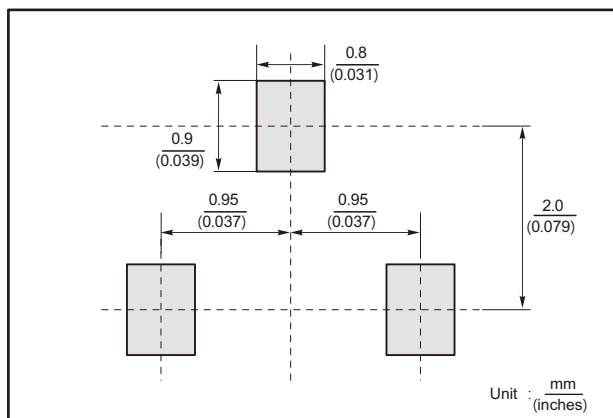




SOT-23 Package Outline Dimensions



The recommended mounting pad size



Marking

Type number	Marking code
PM4530WD	345



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