

General Description

AP4953DY combines advanced MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. This device is most suitable to load-switch or PWM applications.

Applications

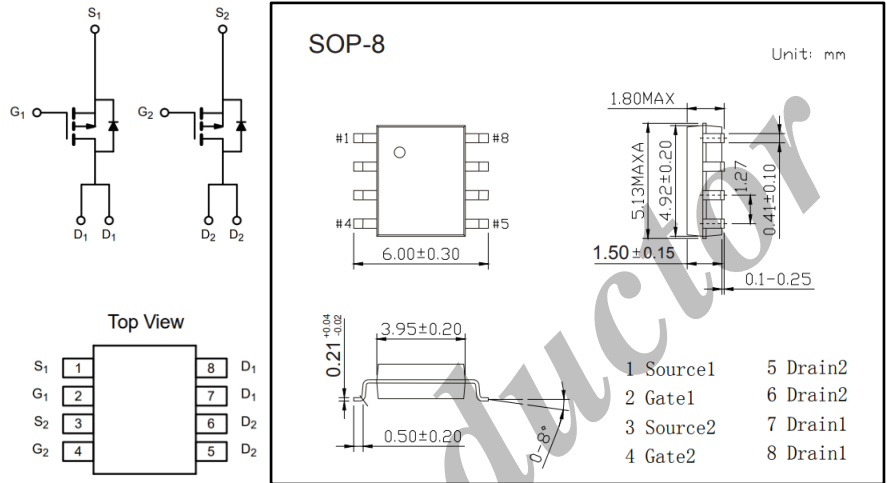
- DC-DC converter for portable devices
- Load switch

Product Summary

V_{DS}	30V
I_D (at $V_{GS} = -10V$)	4.9A
$R_{DS(ON)}$ (at $V_{GS} = -10V$)	< 53m Ω
$R_{DS(ON)}$ (at $V_{GS} = -4.5V$)	< 95m Ω

Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	$T_a = 25^\circ C$	-4.9
		$T_a = 70^\circ C$	-3.9
Pulsed Drain Current	I_{DM}	-30	A
Power Dissipation	P_D	$T_a = 25^\circ C$	2
		$T_a = 70^\circ C$	1.3
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$
Thermal Characteristics			
Thermal Resistance, Junction-to-Ambient	Steady State	$R_{\theta JA}$	62.5 $^\circ C/W$



• **Electrical Characteristics Ta = 25°C**

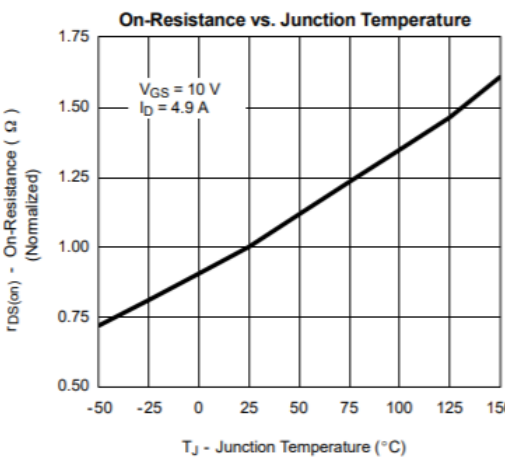
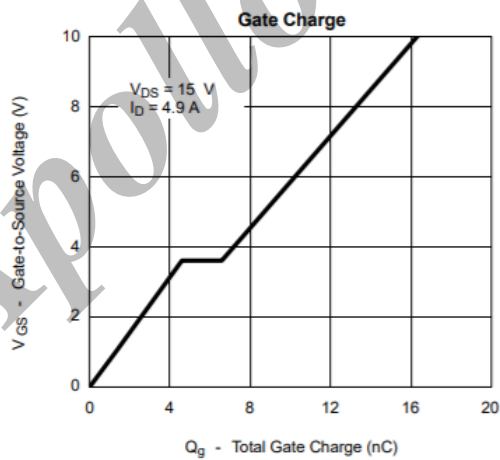
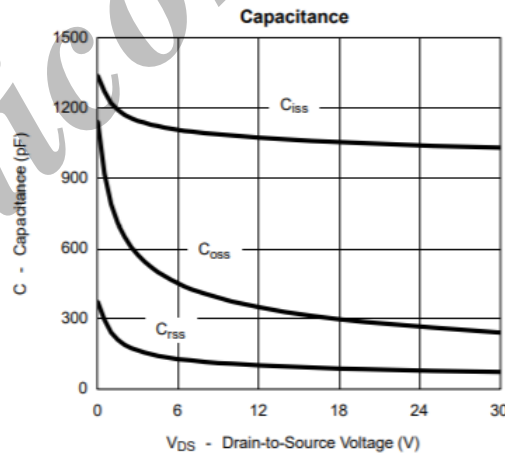
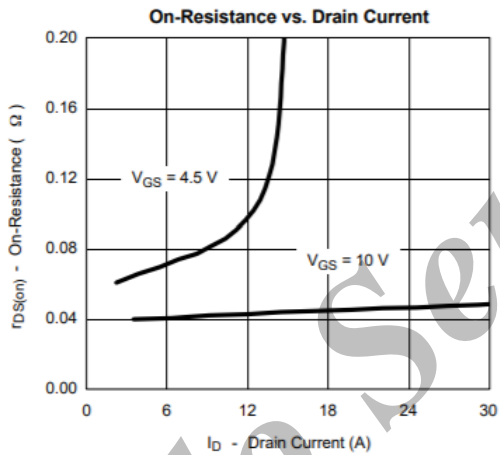
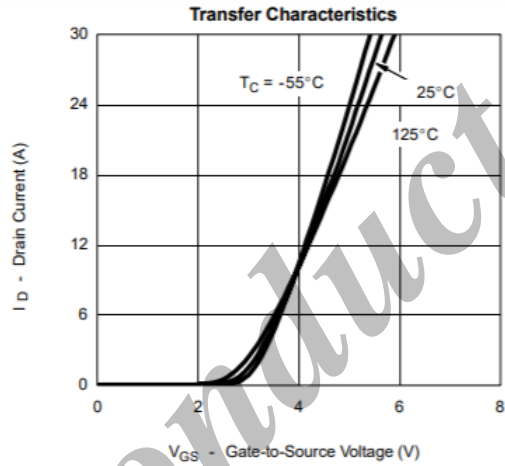
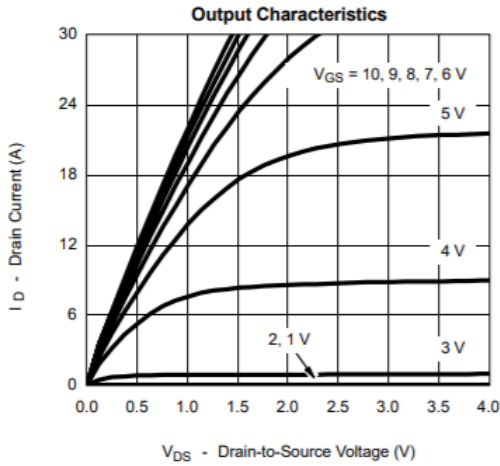
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Parameters						
Drain-Source Breakdown Voltage	V_{DSS}	$I_D = -250\mu A, V_{GS} = 0V$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$			-1	μA
		$V_{DS} = -30V, V_{GS} = 0V, T_j = 55^\circ C$			-25	
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1		-3	V
On-State Drain Current	$I_{D(ON)}$	$V_{GS} = -10V, V_{DS} = -5V$	-20			A
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = -10V, I_D = -4.9A$		43	53	m Ω
		$V_{GS} = -4.5V, I_D = -3.6A$		70	95	
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -6.5A$		10		S
Diode Forward Voltage	V_{SD}	$I_S = -1.7A, V_{GS} = 0V$			-1.2	V
Maximum Body-Diode Continuous Current	I_S				-1.7	A
Dynamic Parameters						
Total Gate Charge	Q_g	$V_{GS} = -10V, V_{DS} = -15V, I_D = -4.9A$		16	25	nC
Gate Source Charge	Q_{gs}		5			
Gate Drain Charge	Q_{gd}		2			
Gate Resistance	R_g		2		7.1	Ω
Turn-On Delay Time	$t_{D(on)}$	$V_{GS} = -10V, V_{DS} = -15V, R_L = 15\Omega, R_{GEN} = 6\Omega$		9	15	ns
Turn-On Rise Time	t_r		13	20		
Turn-Off Delay Time	$t_{D(off)}$		25	40		
Turn-Off Fall Time	t_f		15	25		
Body Diode Reverse Recovery Time	t_{rr}	$I_F = -1.7A, d_i/d_t = 100A/\mu s$		60	90	

• **Ordering Information**

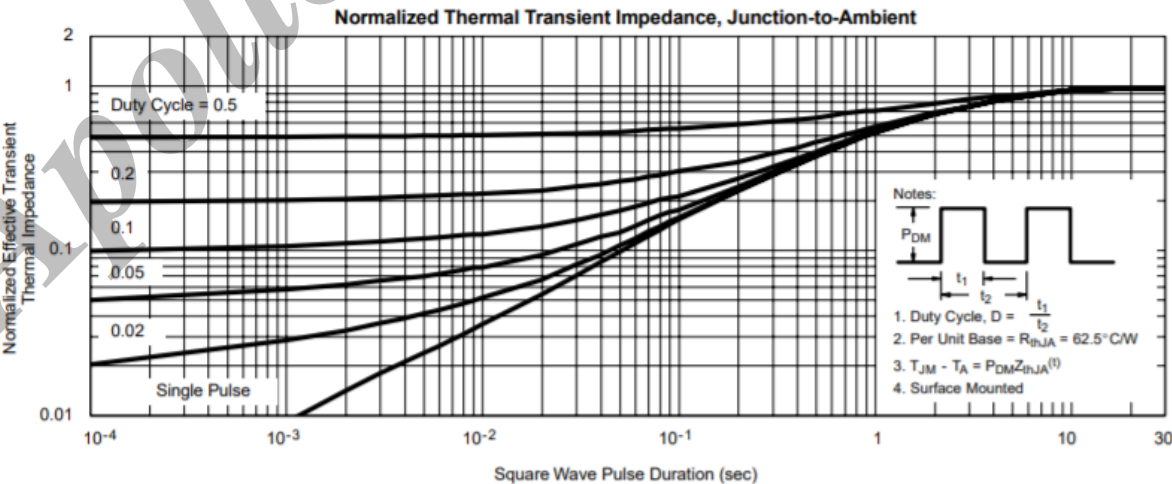
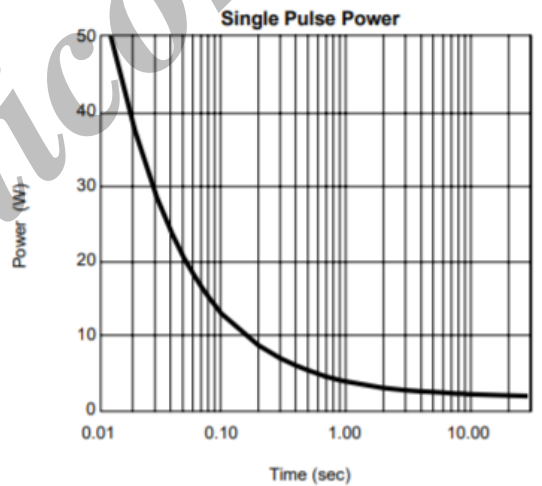
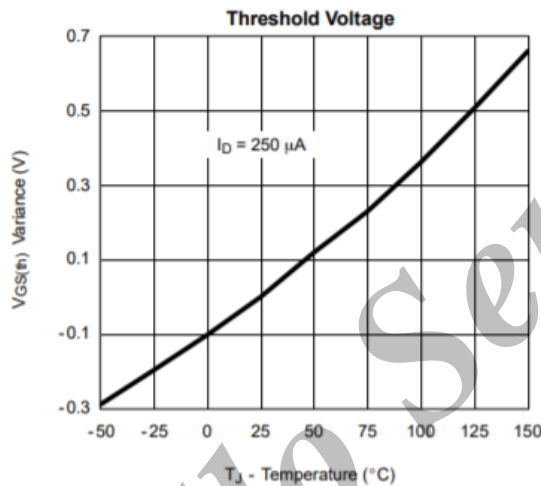
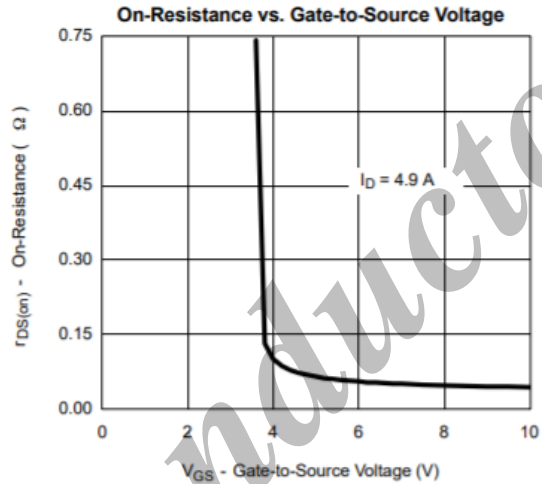
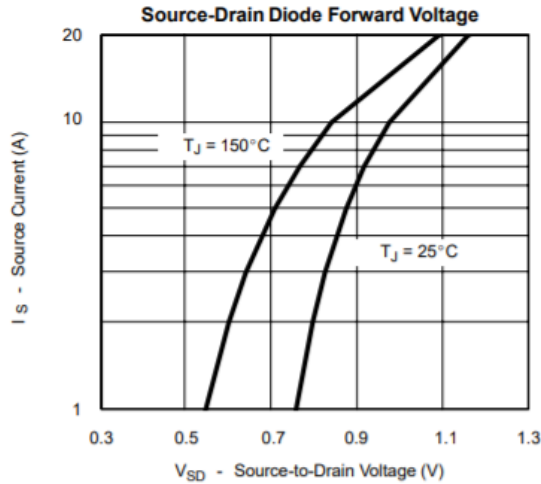
Ordering Part Number	Package	MOQ
AP4953DY	SOP-8	2,500 pcs / reel

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• Typical Electrical and Thermal Characteristics



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