WANSEMI
万代半导体

WP4953

Enhancement Mode N-Channel Power MOSFET

SOP8/PMOS/-30V/±20V/-1.6V/-5.3A/36mΩ

Rev0.5

-30V,36mΩ, -5.3A, P-Channel MOSFET

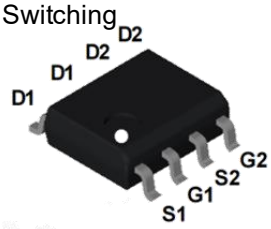
1.Features

- Fast switching speed
- High power and current handling capability

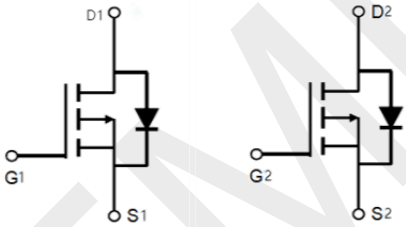
V_{DS}	$R_{DS(on)}$ Typ.	I_D.
-30V	36mΩ @ -10V	-5.3A
	48mΩ @ -4.5V	

2.Applications

- Power Management
- Load Switching



SOP8
Pin Description



Schematic Diagram

3. Package Marking and Ordering Information

Part no.	Marking	Package	PCS/Reel	PCS/CTN.
WP4953	4953	SOP8	4,000	48,000

4.Absolute Max Ratings at Ta=25℃ (Note1)

Parameter	Symbol	Maximum	Units
Drain to Source Voltage	V_{DSS}	-30	V
Gate to Source Voltage	V_{GSS}	±20	V
Drain Current (DC)	I_D	-5.3	A
Drain Current (Pulse), PW≤300μs	I_{DP}	-16.4	A
Total Dissipation	P_D	2	W
Junction Temperature	T_j	175	℃
Storage Temperature	T_{stg}	-55 to +175	℃

Note 1: Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

5.Thermal Resistance Ratings (Note 2)

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	78	℃/W

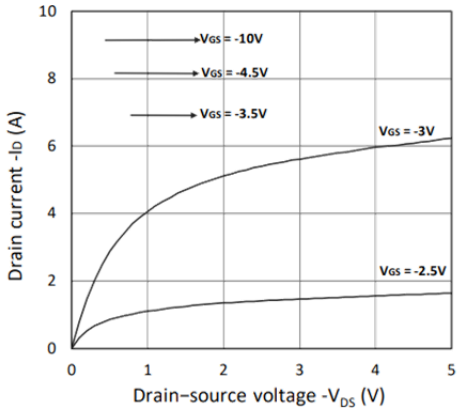
Note 2: When mounted on 1 inch square copper board t ≤ 10sec The value in any given application depends on the user's specific board design.

6.Electrical Characteristics at Ta=25℃ (Note 3)

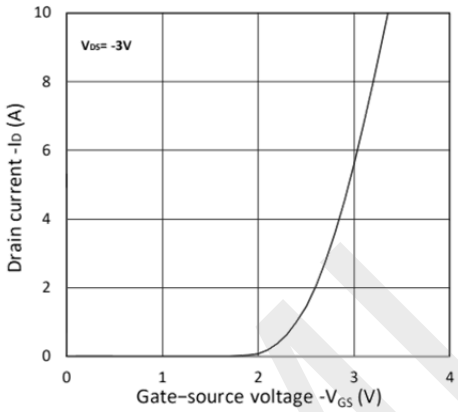
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = -250μA, V_{GS} = 0V	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS} = -30V, V_{GS} = 0V			-1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_{DS}=-250μA	-1.0	-1.6	-2.2	V
Static Drain to Source On-State Resistance	$R_{DS(on)}$	I_D =-5.3A, V_{GS} =-10V		36	45	mΩ
		I_D =-4.2A, V_{GS} =-4.5V		48	70	mΩ
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-15V, Frequency=1.0MHz		528		pF
Output Capacitance	C_{oss}			132		pF
Reverse Transfer Capacitance	C_{rss}			70		pF
Turn-ON Delay Time	$t_{d(on)}$	V_{DS} =-15V, I_D =-1A, R_G = 6Ω, V_{GS} = -10V		7		ns
Rise Time	t_r			13		ns
Turn-OFF Delay Time	$t_{d(off)}$			14		ns
Fall Time	t_f			9		ns
Total Gate Charge	Q_g	V_{DS} = -15V, V_{GS} = -5V, I_D = -5A		6		nC
	Q_{gs}			2.2		nC
	Q_{gd}			2		nC
Diode Forward Voltage	V_{FSD}	I_S = -2.6A, V_{GS} = 0			-1.3	V

Note 3: Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

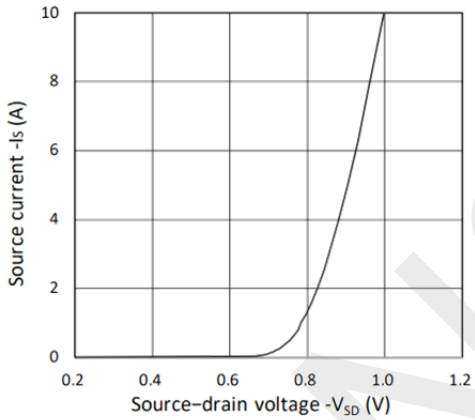
7.Typical Electrical and Thermal Characteristics



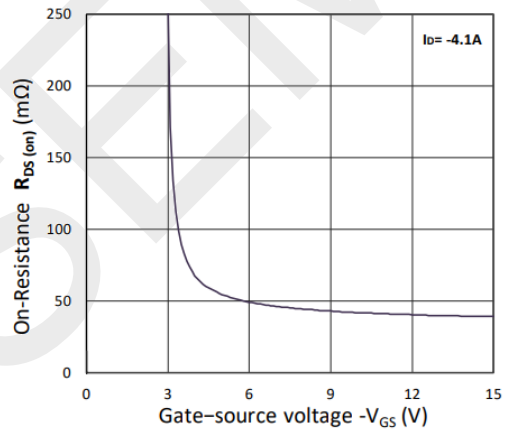
Output Characteristics



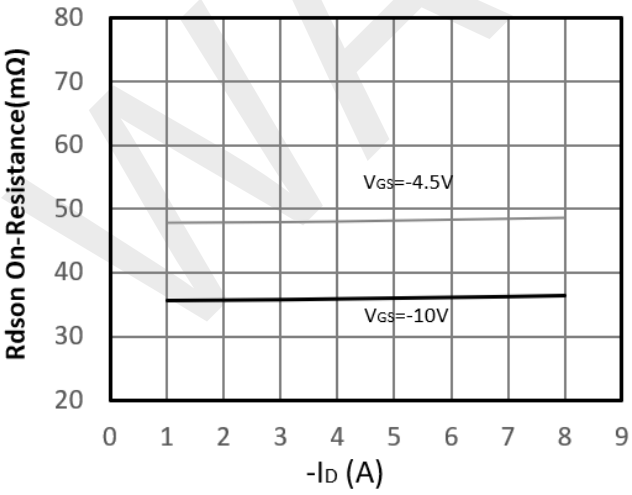
Transfer Characteristics



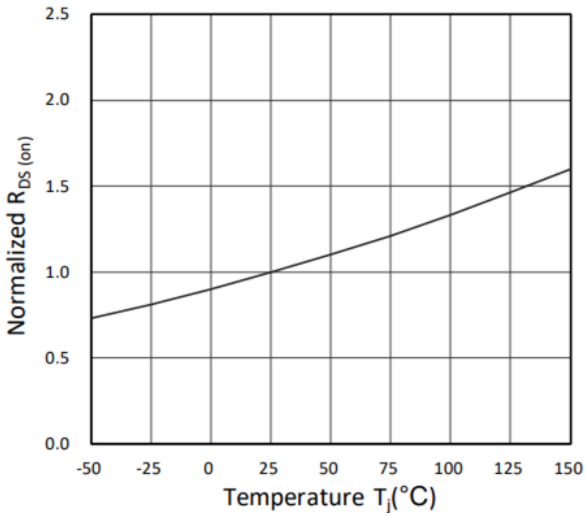
Forward Characteristics of Reverse



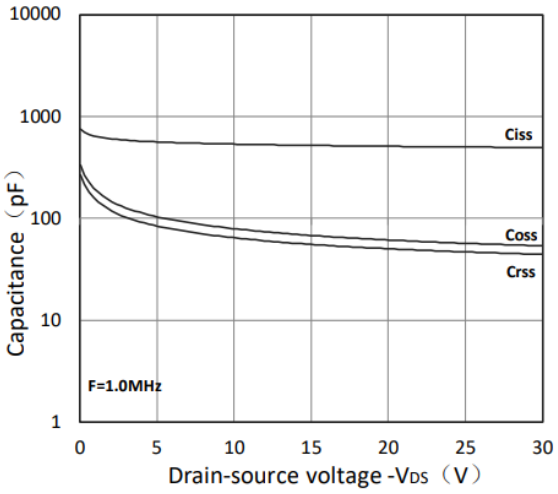
RDS(ON) vs. VGS



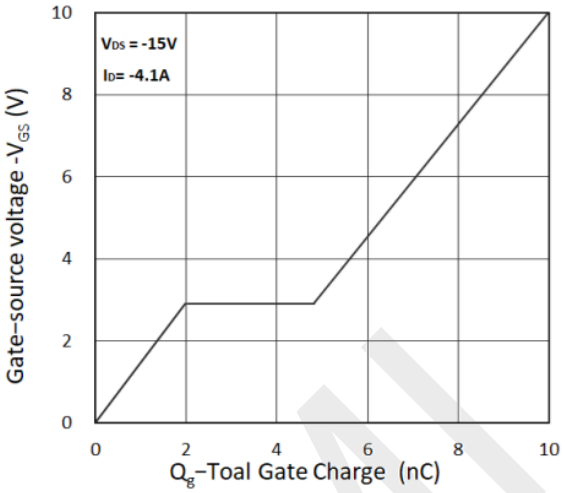
RDS(ON) vs. ID



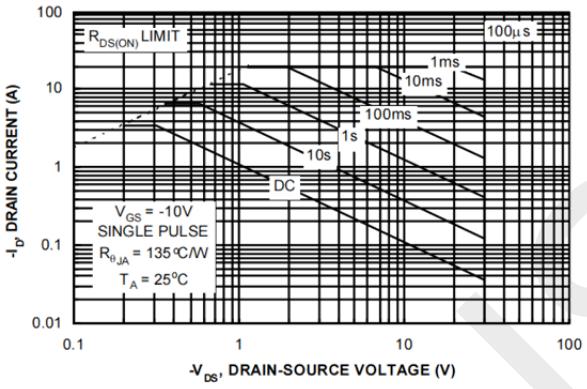
Normalized RDS(on) vs. Temperature



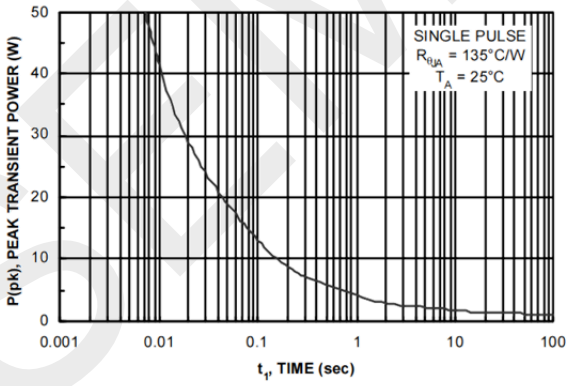
Capacitance Characteristics



Gate Charge Characteristics

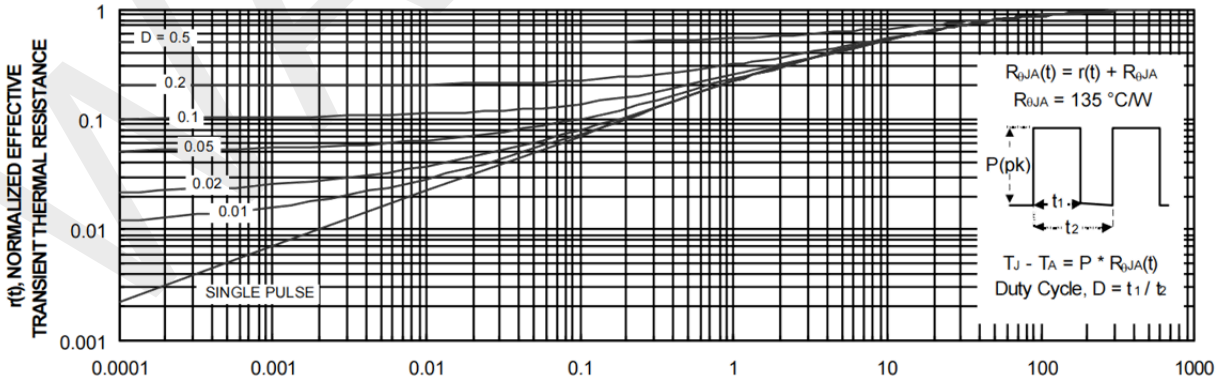


Maximum Safe Operating Area



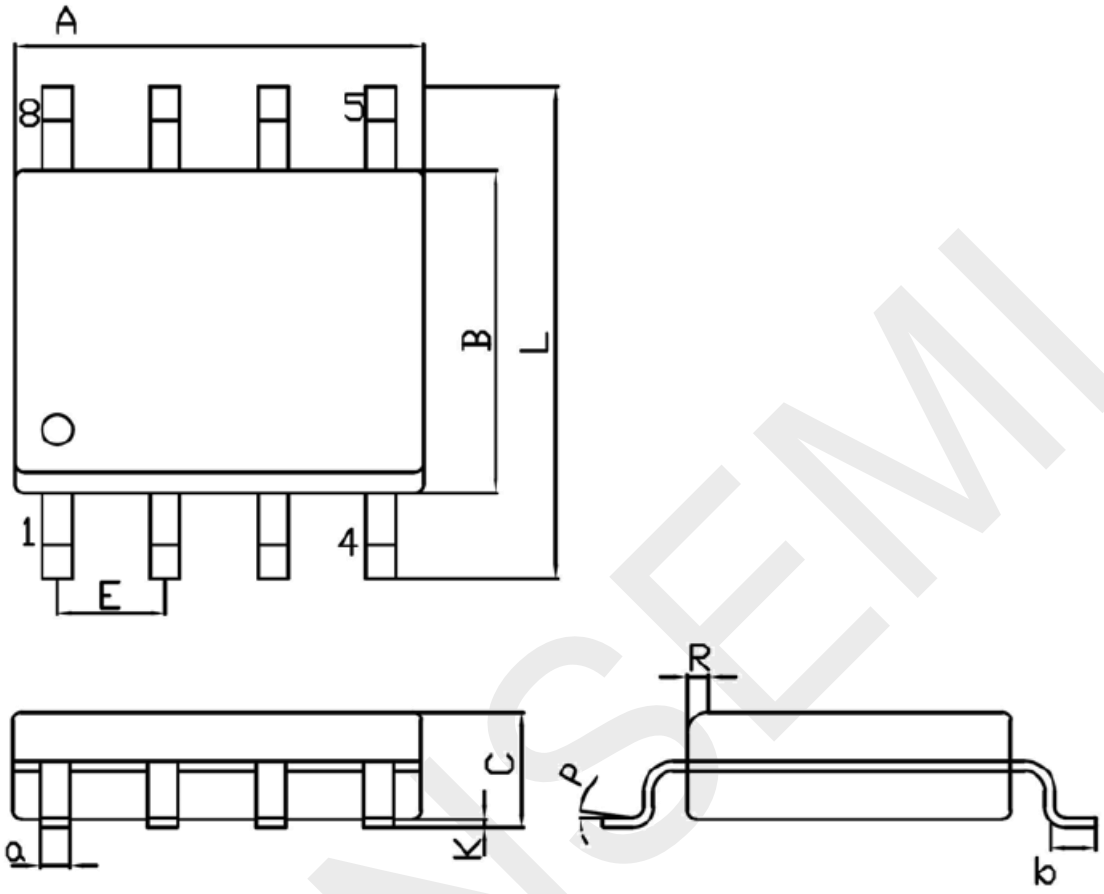
Single Pulse Maximum

Power Dissipation



Transient Thermal Response Curve

8.Package Dimensions



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.70	5.10	C	1.35	1.75
B	3.70	4.10	a	0.35	0.49
L	5.80	6.20	R	0.30	0.60
E	1.27BSC		P	0°	7°
K	0.12	0.22	b	0.40	1.25

8.Important Notice

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