

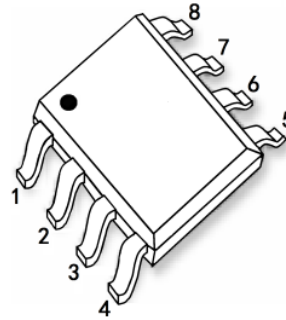
# KY4953

-30V Dual P-Channel Mosfet

## FEATURES

- $R_{DS(ON)} \leq 55m\Omega$  (43m $\Omega$  Typ.) @ $V_{GS}=-10V$
- $R_{DS(ON)} \leq 90m\Omega$  (55m $\Omega$  Typ.) @ $V_{GS}=-4.5V$

## SOP-8

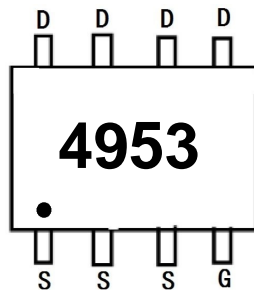


## APPLICATIONS

- PWM Applications
- Load Switch
- Power Management

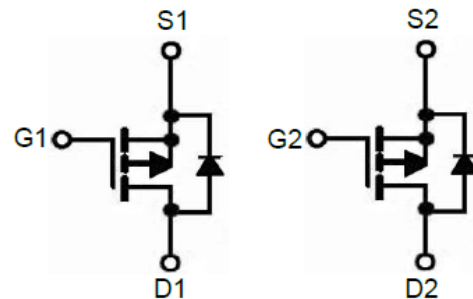
1: S1      3: S2      5: D2      7: D1  
2: G1      4: G2      6: D2      8: D1

## MARKING



**4953** : Device Code

## P-CHANNEL MOSFET



## MAXIMUM RATINGS $T_a=25^{\circ}C$ unless otherwise specified

Symbol	Parameter	Rating	Units
$V_{DSS}$	Drain-Source Voltage	-30	V
$V_{GSS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current	-5.1	A
$I_{DM}$	Pulsed Drain Current	-20	A
$P_D$	Power Dissipation	2.5	W
$R_{\theta JA}$	Junction-to-Ambient	50	$^{\circ}C/W$
$T_J$	Junction Temperature	150	$^{\circ}C$
$T_{STG}$	Operating Junction and Storage Temperature Range	-55 to 150	$^{\circ}C$

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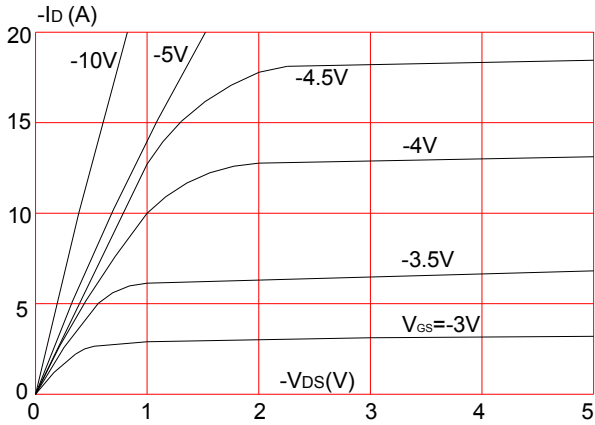
## ELECTRICAL CHARACTERISTICS Ta= 25°C unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>OFF Characteristics</b>						
V <sub>DSS</sub>	Drain to Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	-30	--	--	V
I <sub>DSS</sub>	Drain to Source Leakage Current	V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V	--	--	-1	μA
I <sub>GSS</sub>	Gate to Source Forward Leakage	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V	--	--	±100	nA
<b>ON Characteristics</b>						
V <sub>GS(TH)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-1	-1.3	-2	V
R <sub>DS(ON)</sub>	Drain-to-Source On-Resistance	V <sub>GS</sub> =-10V, I <sub>D</sub> =-5.1A	--	43	55	mΩ
R <sub>DS(ON)</sub>	Drain-to-Source On-Resistance	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-4.2A	--	55	90	mΩ
<b>Dynamic Characteristics</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> = 0V, V <sub>DS</sub> = -15V f = 1.0MHz	--	520	--	pF
C <sub>oss</sub>	Output Capacitance		--	130	--	
C <sub>rss</sub>	Reverse Transfer Capacitance		--	70	--	
<b>Switching Characteristics</b>						
t <sub>d(ON)</sub>	Turn-on Delay Time	I <sub>D</sub> =-1A, V <sub>DS</sub> = -15V V <sub>GS</sub> = -10V, R <sub>G</sub> =6Ω	--	7	--	ns
t <sub>r</sub>	Rise Time		--	13	--	
t <sub>d(OFF)</sub>	Turn-Off Delay Time		--	14	--	
t <sub>f</sub>	Fall Time		--	9	--	
Q <sub>g</sub>	Total Gate Charge	I <sub>D</sub> =-5.1A, V <sub>DS</sub> = -15V V <sub>GS</sub> = -10V	--	11	--	nC
Q <sub>gs</sub>	Gate to Source Charge		--	2.2	--	
Q <sub>gd</sub>	Gate to Drain ("Miller") Charge		--	3	--	
<b>Source-Drain Diode Characteristics</b>						
V <sub>SD</sub>	Diode Forward Voltage	I <sub>S</sub> =-5.1A, V <sub>GS</sub> =0V T <sub>J</sub> =25°C	--	-0.86	-1.2	V

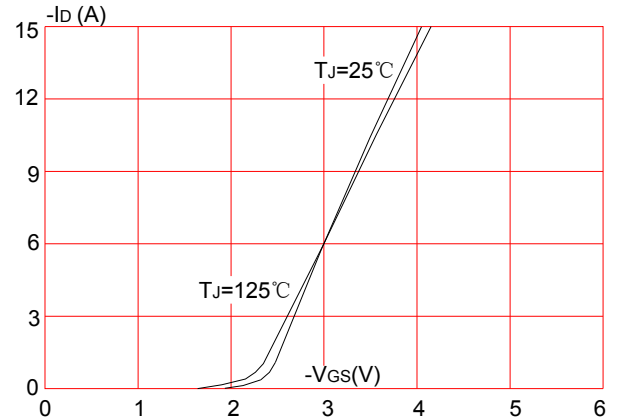
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## TYPICAL PERFORMANCE CHARACTERISTICS

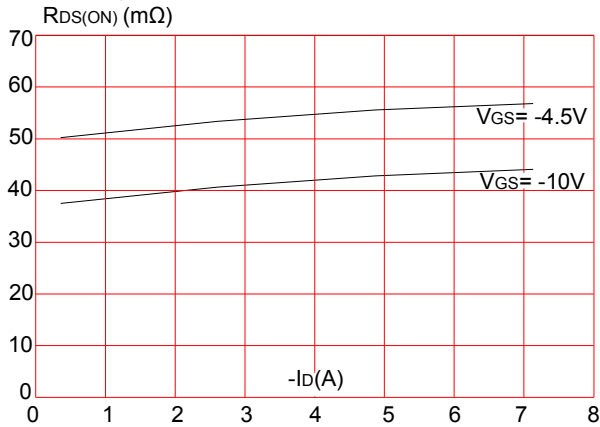
**Figure 1: Output Characteristics**



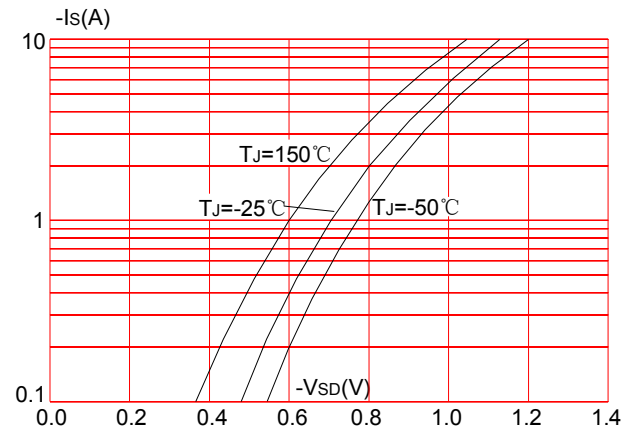
**Figure 2: Typical Transfer Characteristics**



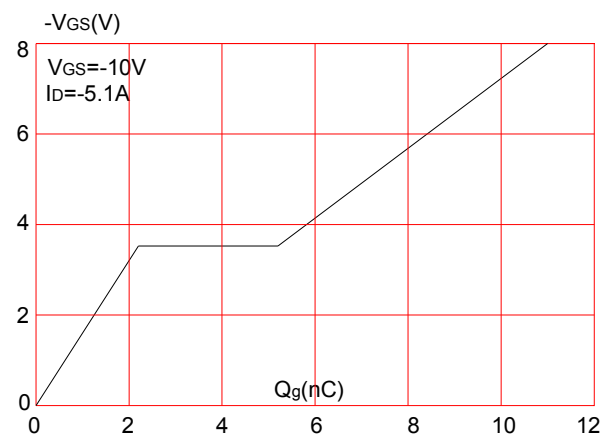
**Figure 3: On-resistance vs. Drain Current**



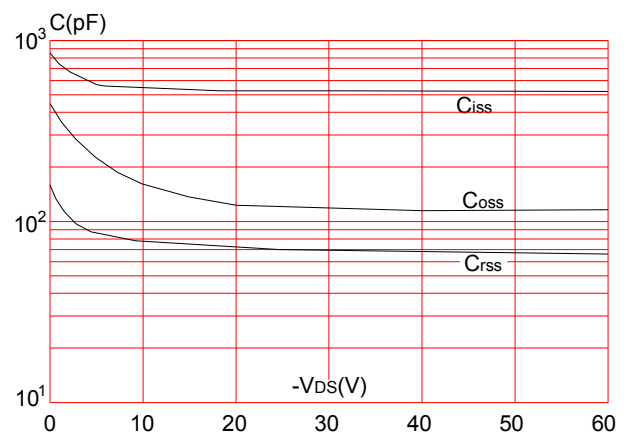
**Figure 4: Body Diode Characteristics**



**Figure 5: Gate Charge Characteristics**



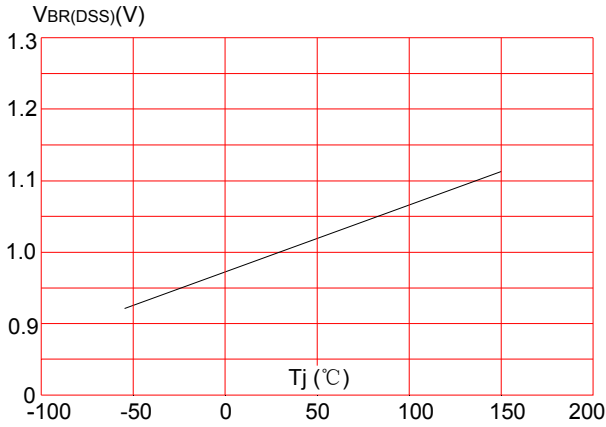
**Figure 6: Capacitance Characteristics**



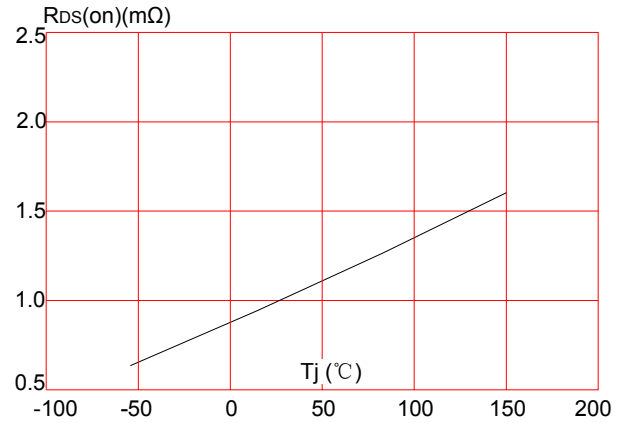
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## TYPICAL PERFORMANCE CHARACTERISTICS (cont.)

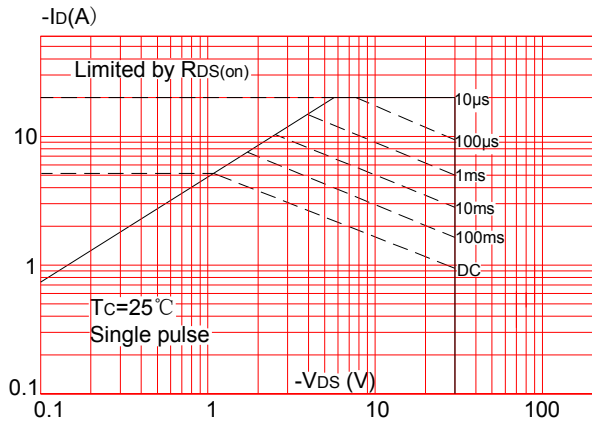
**Figure 7:** Normalized Breakdown Voltage vs. Junction Temperature



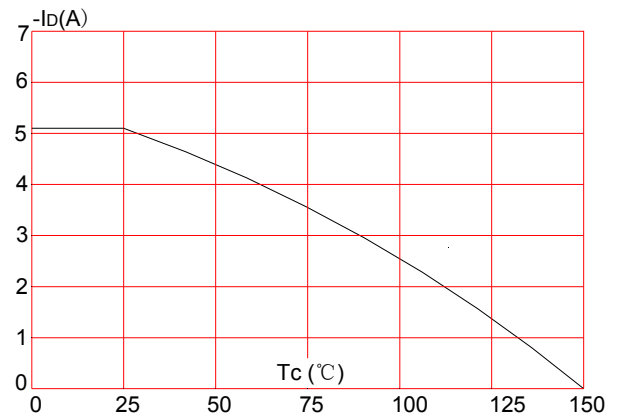
**Figure 8:** Normalized on Resistance vs. Junction Temperature



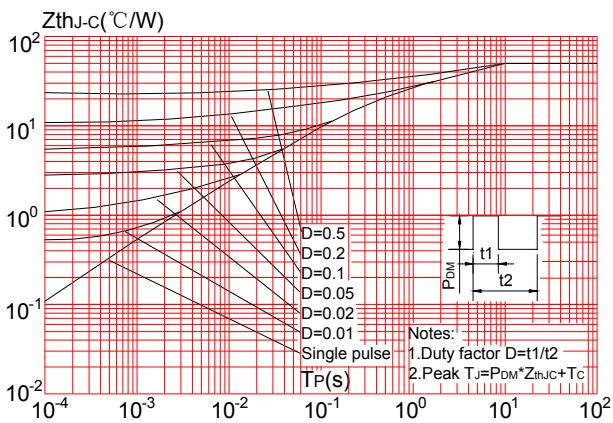
**Figure 9:** Maximum Safe Operating Area



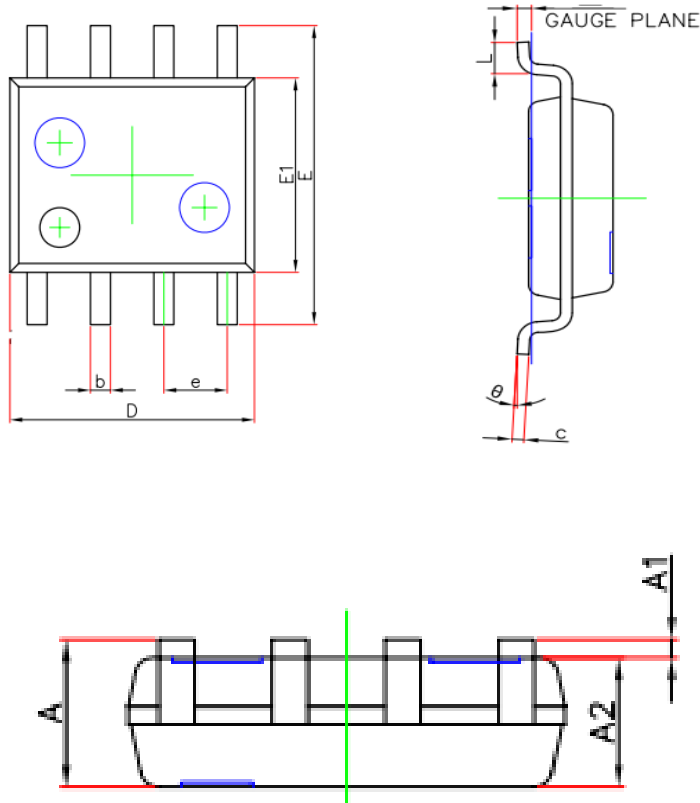
**Figure 10:** Maximum Continuous Drain Current vs. Case Temperature



**Figure.11:** Maximum Effective Transient Thermal Impedance, Junction-to-Ambient (SOP-8)



**SOP-8 PACKAGE OUTLINE DRAWING**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.063	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E1	3.800	4.000	0.150	0.157
E	5.800	6.200	0.228	0.244
e	1.27(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
$\theta$	0°	8°	0°	8°