

KY4953C

-30V Dual P-Channel Mosfet

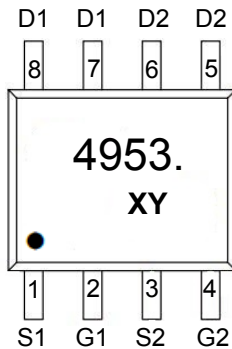
FEATURES

- $R_{DS(ON)} \leq 87m\Omega$ (66m Ω Typ.)
@ $V_{GS}=-10V$
- $R_{DS(ON)} \leq 130m\Omega$ (100m Ω Typ.)
@ $V_{GS}=-4.5V$

APPLICATIONS

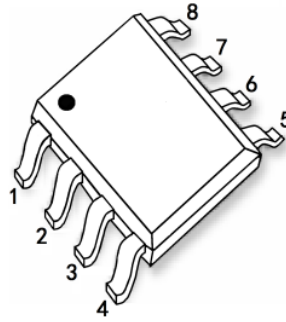
- PWM Applications
- Load Switch
- Power Management

MARKING



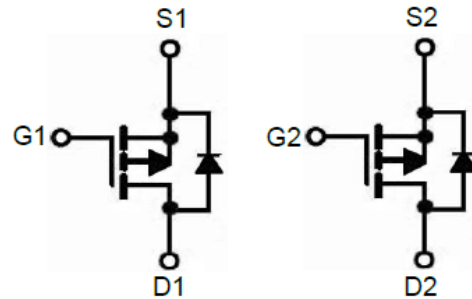
XY: DC Code

SOP-8



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

P-CHANNEL MOSFET



MAXIMUM RATINGS Ta=25°C unless otherwise specified

Symbol	Parameter	Rating	Units
V_{DSS}	Drain-Source Voltage	-30	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	-3.8	A
I_{DM}	Pulsed Drain Current <small>note1</small>	-12	A
P_D	Power Dissipation	2.0	W
$R_{\theta JA}$	Junction-to-Ambient	62.5	$^{\circ}C/W$
T_J	Junction Temperature	150	$^{\circ}C$
T_{stg}	Operating Junction and Storage Temperature Range	-55 to 150	$^{\circ}C$

ELECTRICAL CHARACTERISTICS Ta= 25°C unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
OFF Characteristics						
V _{DSS}	Drain to Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-30	--	--	V
I _{DSS}	Drain to Source Leakage Current	V _{DS} =-30V, V _{GS} =0V	--	--	-1	μA
I _{GSS}	Gate to Source Forward Leakage	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
ON Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1	-1.8	-2	V
R _{DS(on)}	Drain-to-Source On-Resistance <small>note2</small>	V _{GS} =-10V, I _D =-3A	--	66	87	mΩ
		V _{GS} =-4.5V, I _D =-2A	--	100	130	mΩ
Dynamic Characteristics <small>note3</small>						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-15V f = 1.0MHz	--	320	--	pF
C _{oss}	Output Capacitance		--	50	--	
C _{rss}	Reverse Transfer Capacitance		--	35	--	
Q _g	Total Gate Charge	I _D =-3A, V _{DS} =-15V V _{GS} =-10V	--	9.0	--	nC
Q _{gs}	Gate to Source Charge		--	1.5	--	
Q _{gd}	Gate to Drain ("Miller") Charge		--	2.0	--	
Switching Characteristics <small>note3</small>						
t _{d(on)}	Turn-on Delay Time	I _D =-1A, V _{DS} =-15V V _{GS} =-10V, R _G =6Ω	--	5	--	ns
t _r	Rise Time		--	11	--	
t _{d(off)}	Turn-Off Delay Time		--	12	--	
t _f	Fall Time		--	7	--	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _S =-3A, V _{GS} =0V T _J =25°C	--	--	-1.2	V

Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature

2. Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 1%

3. Guaranteed by design, not subject to production testing

TYPICAL PERFORMANCE CHARACTERISTICS

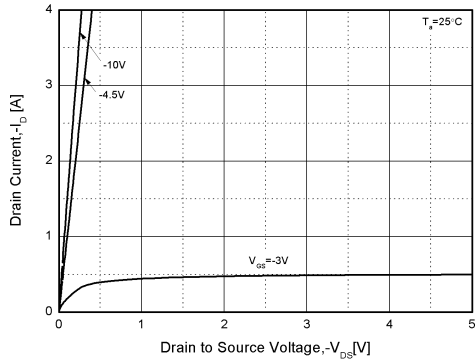


Figure1. Output Characteristics

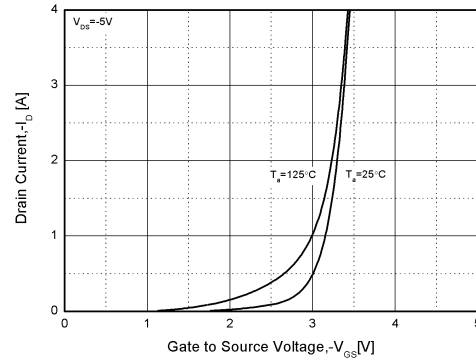


Figure2. Transfer Characteristics

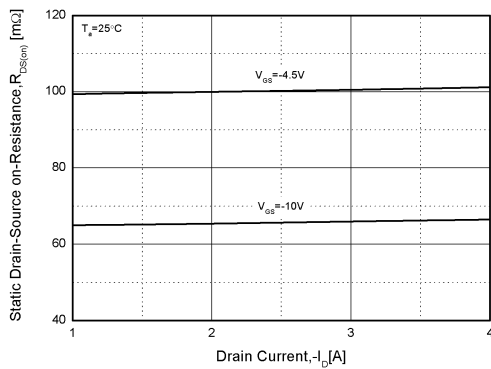


Figure3. Rds(on)-Drain Current

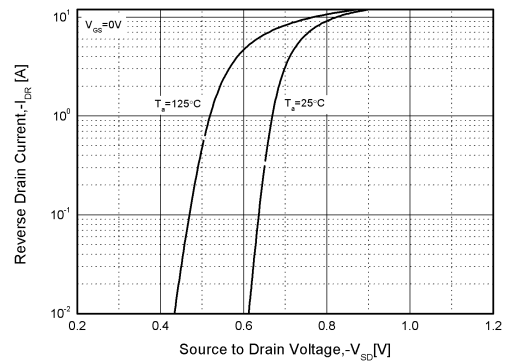


Figure4. Typical Source-Drain Diode Forward Voltage

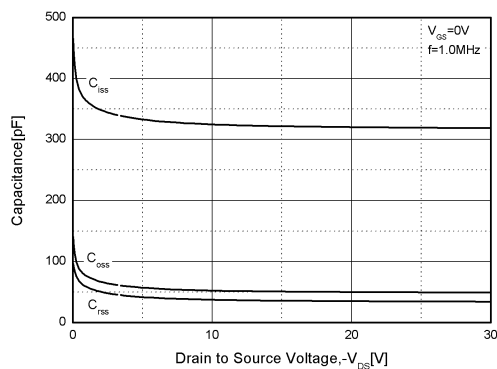


Figure5. Capacitance Characteristics

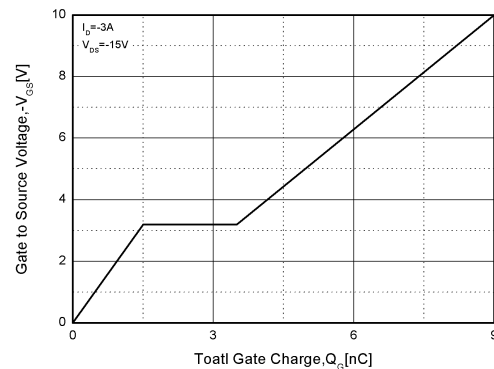


Figure6. Gate Charge

TYPICAL PERFORMANCE CHARACTERISTICS (cont.)

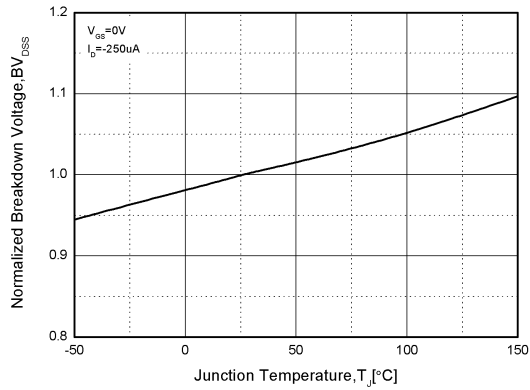


Figure7. Normalized Breakdown Voltage vs. Temperature

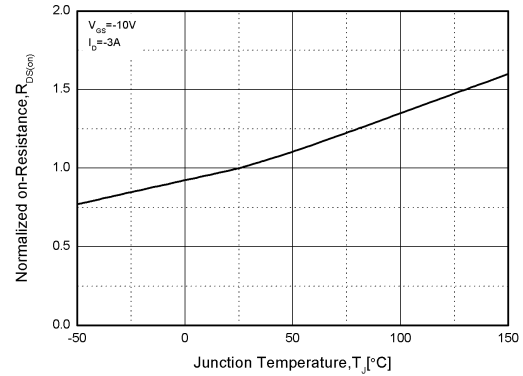


Figure8. Normalized on Resistance vs. Temperature

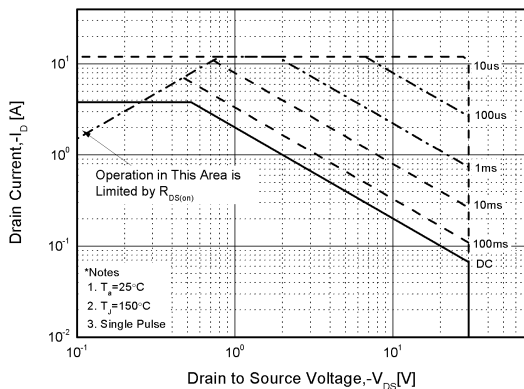


Figure9. Safe Operation Area

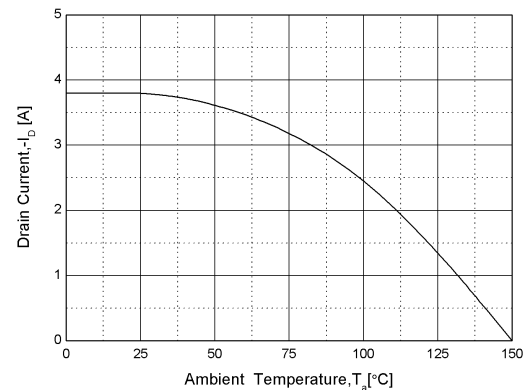


Figure10. Drain Current vs. Ambient Temperature

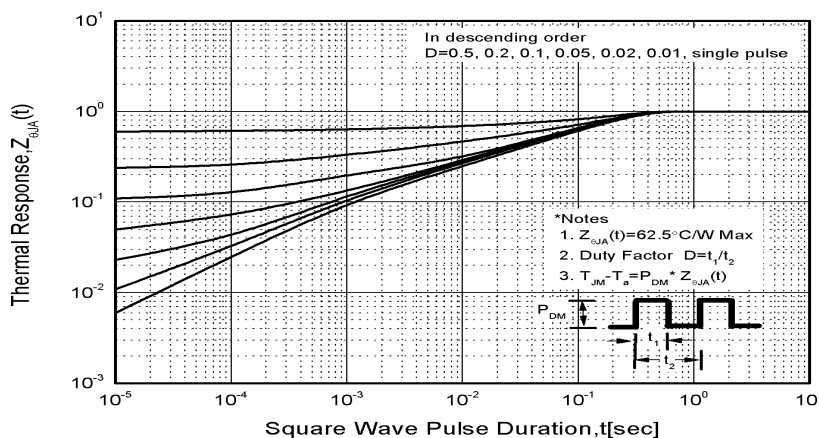
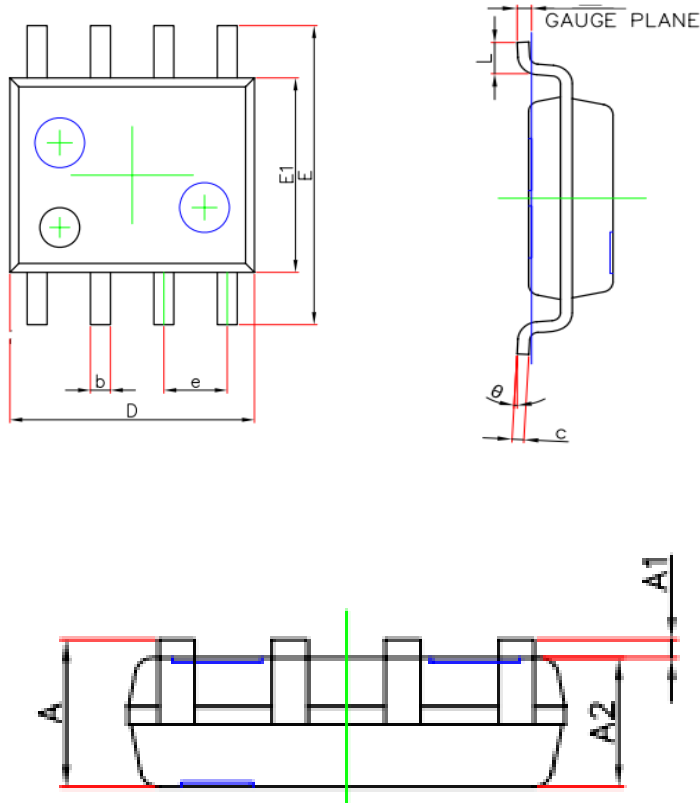


Figure11. Transient Thermal Response Curve

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
θ	0°	8°	0°	8°