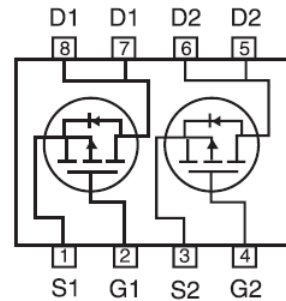
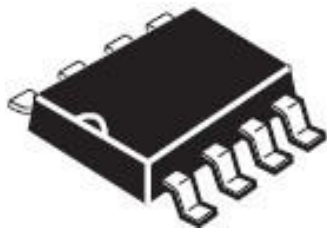


## FEATURES

- ◆ Super high dense cell design for low  $R_{DS(ON)}$ .
- ◆ Rugged and reliable.
- ◆ SOP-8 package.
- ◆ Pb Free.

Product Summary		
$V_{DS}$ (V)	$I_D$ (A)	$R_{DS(ON)}$ (m $\Omega$ ) Max
-30V	-5.3A	46 @ $V_{GS} = 10V$
		78 @ $V_{GS} = 4.5V$



## SOP-8

## ABSOLUTE MAXIMUM RATINGS (TA = 25 °C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous <sup>a</sup> @Tj=125°C - Pulse $d_b$	$I_D$	-5.3	A
	$I_{DM}$	-24	A
Drain-source Diode Forward Current <sup>a</sup>	$I_S$	-1.7 A	A
Maximum Power Dissipation <sup>a</sup>	$P_D$	2.5	W
Operating Junction and Storage Temperature Range	$T_I, T_{STG}$	-55 to 150	°C

## THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to Ambient <sup>a</sup>	Rth JA	50	°C/W
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## ELECTRICAL CHARACTERISTICS (TA = 25 °C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BVDSS	VGS=0V, ID=-250μA	-30			V
Zero Gate Voltage Drain Current	IDSS	VDS=-24V, VGS=0V			-1	μA
Gate-Body Leakage	IGSS	VGS=±20V, VDS=0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	VGS(th)	VDS=VGS, ID=-250μA	-1	-1.5	-2.5	V
Drain-Source On-State Resistance	RDS(ON)	VGS=-10V, ID=-5.6A		46	55	mΩ
		VGS=-4.5V, ID=-4.2A		78	85	
Forward Transconductance	~FS	VGS=-5V, ID=-5.6A		5		S
DAYNAMIC CHARACTERISTICS						
Input Capacitance	Ciss	VDS=-15V, VGS=0V f=1.0MHz		582		pF
Output Capacitance	Coss			125		pF
Reverse Transfer Capacitance	Crss			86		pF
SWITCHING CHARACTERISISTICS						
Turn-On Delay Time	tD(ON)	VDD=-15V ID=-5.3A, VGEN=-4.5V RL=10ohm RGEN=10ohm		9		ns
Rise Time	tr			10		ns
Turn-Off Delay Time	tD(OFF)			38		ns
Fall Time	tf			23		ns
Total Gate Charge	Q~		VDS=-15V, ID=-1A		11.7	
Gate-Source Charge	Q~s	VGS=-10V		2.1		nC
Gate-Drain Charge	Q~d			2.9		nC

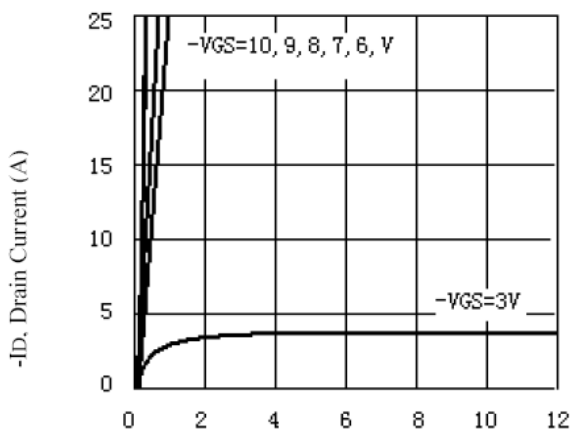
# HT4953

## ELECTRICAL CHARACTERISTICS (TA = 25 °C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>s</sub> =-1.7A		-0.84	-1.2	V

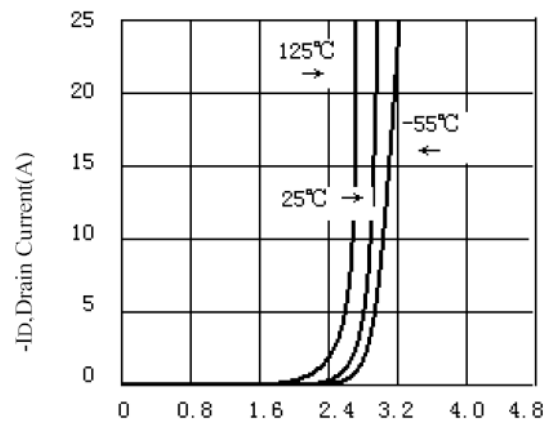
Notes

- a. Surface Mounted on FR4 Board, t ≤ 10sec
- b. Pulse Test: Pulse Width ≤ 300Us, Duty Cycle ≤ 2%
- c. Guaranteed by design, not subject to production testing.



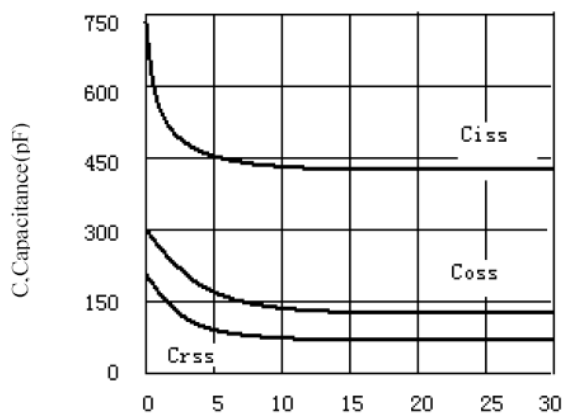
- Vds, Drain-to-Source Voltage (V)

Figure 1. Output Characteristics



-Vgs, Gate-to-source Voltage (V)

Figure 2. Transfer Characteristics



- VGS, Drain-to Source Voltage

Figure3. Capacitance

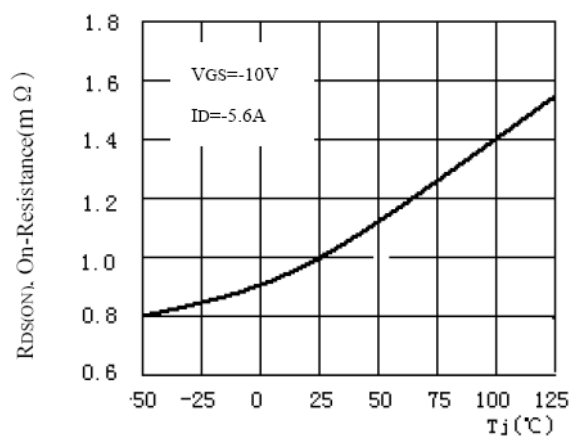
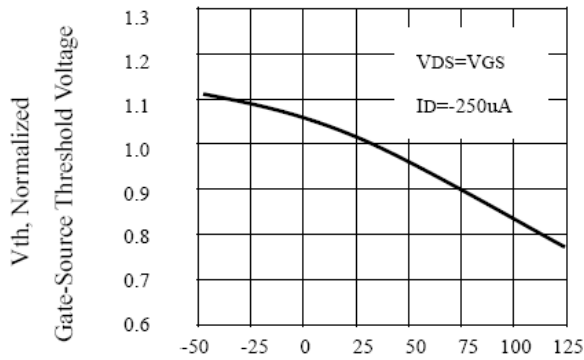
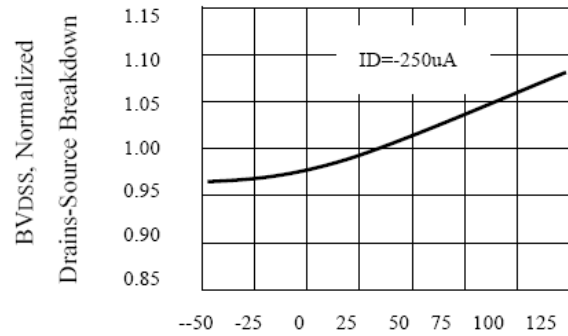


Figure4. On-Resistance Variation with Temperature

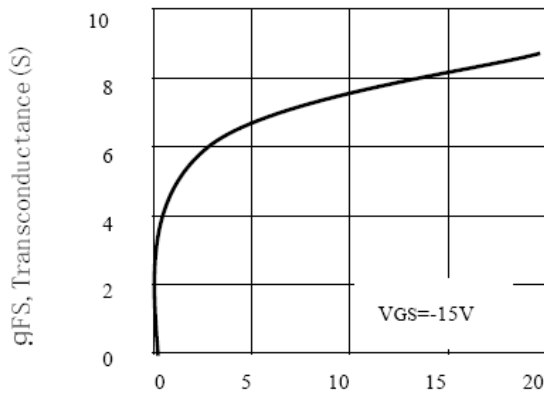
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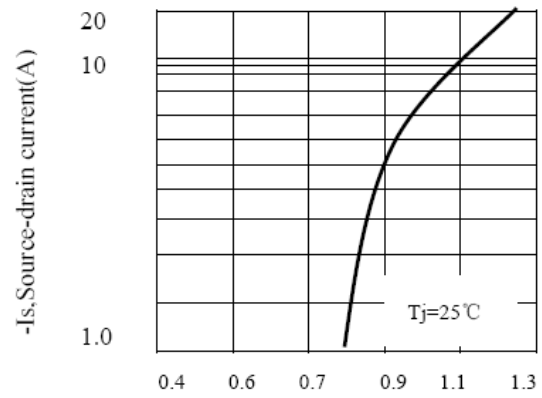
Tj, Junction Temperature(°C)  
**Figure5.Gate Threshold Variation With Temperature**



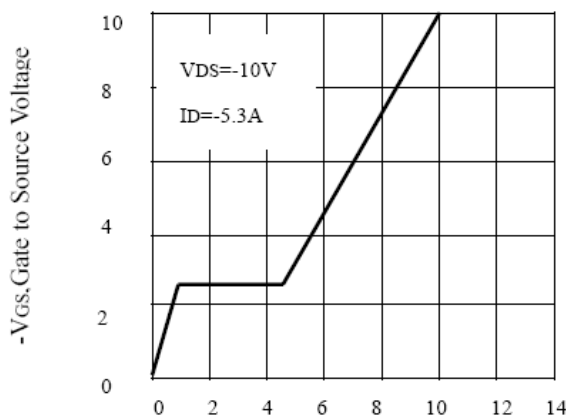
Tj, Junction Temperature (°C)  
**Figure6.Breakdown Voltage Variation With Temperature**



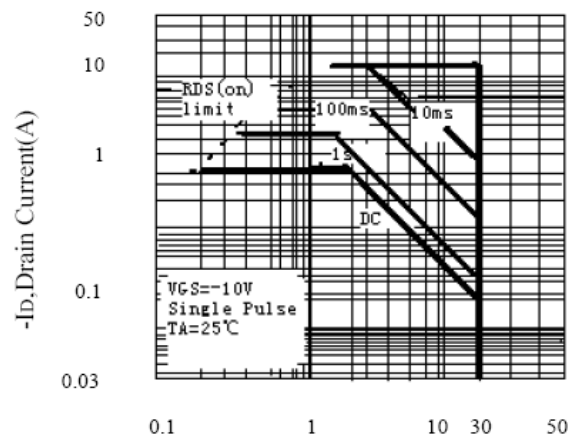
-IDS, Drain-Source Current (A)  
**Figure7.Transconductance Variation With Drain Current**



-VSD, Body Diode Forward Voltage  
**Figure8.Body Diode Forward Voltage Variation with Source Current**



Qg, Total Gate Charge (nC)  
**Figure9. Gate Charge**



-VDS, Drain-Source Voltage(V)  
**Figure10.Maximum Safe Operating Area**