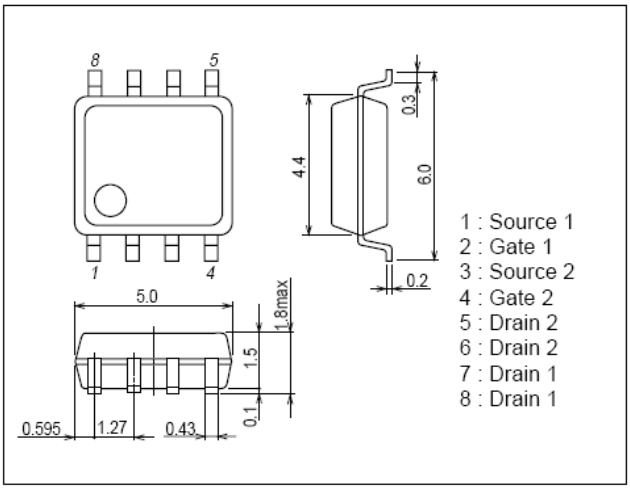
Si4953

Features

- Low On resistance.
- −4.5V drive.
- RoHS compliant.

Package Dimensions

unit : mm
SOP-8



Specifications

Absolute Maximum Ratings at T_a=25^{0}C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-30	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		-5.2	A
Drain Current (Pulse)	I_{DP}	PW≤10uS, duty cycle≤1%	-20	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1000mm^2×0.8mm) 1unit	1.3	W
Total Dissipation	P_T	Mounted on a ceramic board (1000mm^2×0.8mm)	1.7	W
Channel Temperature	T_{ch}		150	^{0}C
Storage Temperature	T_{stg}		-55~+150	^{0}C

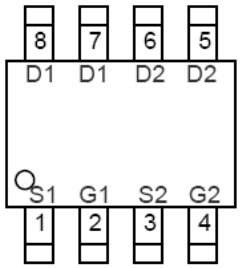
Electrical Characteristics at T_a=25^{0}C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=-250uA, V_{GS}=0V	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V			-1	uA
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_D=-250uA	-1.0		-3.0	V
Static Drain-to-Source On-State Resistance	$R_{DS(ON)}$	I_D=-5.2A, V_{GS}=-10V		37	50	mΩ
	$R_{DS(ON)}$	I_D=-4A, V_{GS}=-4.5V		57	75	mΩ
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		680		pF
Output Capacitance	C_{oss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		120		pF
Reverse Transfer Capacitance	C_{rss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		75		pF

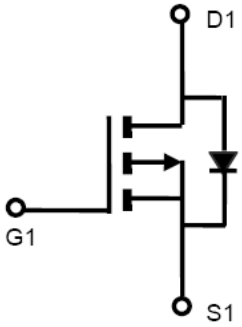
Electrical Characteristics at T_a=25^{0}C (Continued)

Parameter	Symbol	Conditions	Ratings			Unit
			min	Typ	max	
Turn-on Delay Time	$t_{d(on)}$	V_{GEN}=-10V, V_{DS}=-15V, R_L=15Ω, I_D=-1A, R_{GEN}=6Ω		7.0	15	nS
Rise Time	t_r			10	20	nS
Turn-off Delay Time	$t_{d(off)}$			40	80	nS
Fall Time	t_f			20	40	nS
Total Gate Charge	Q_g	V_{DS}=-15V, V_{GS}=-10V, I_D=-5A		10	15	nC
Gate-to-Source Charge	Q_{gs}			4.0		nC
Gate-to-Drain “Miller” Charge	Q_{gd}			2.0		nC
Diode Forward Voltage	V_{SD}	I_S=-2A, V_{GS}=0V		-0.8	-1.2	V

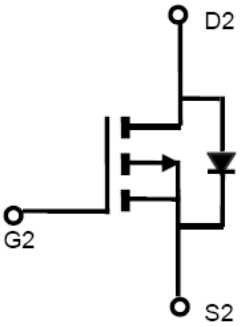
Pin Description



TOP VIEW
SOP-8

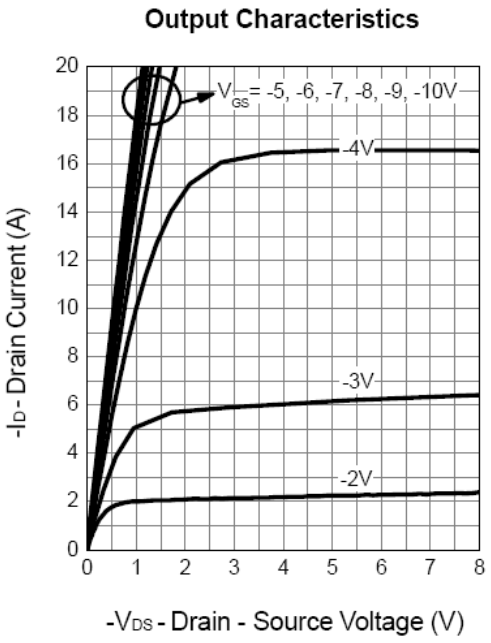


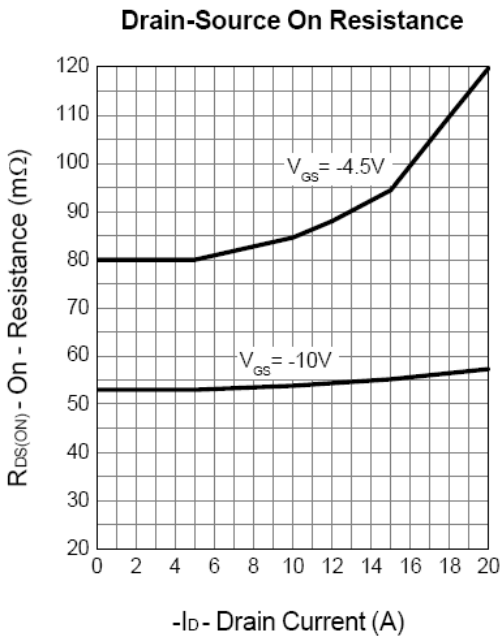
P-Channel



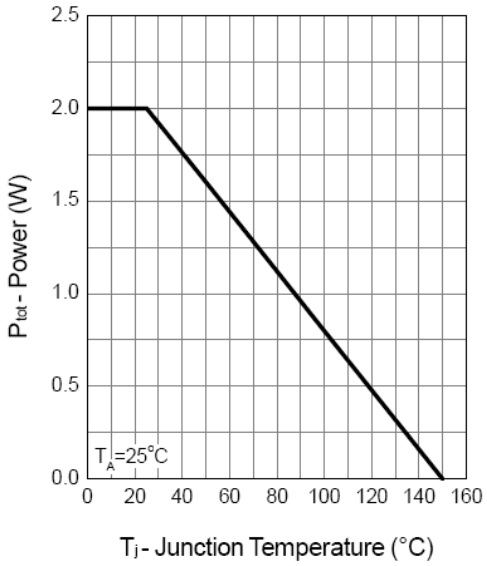
P-Channel

Typical Characteristics at T_a=25^{0}C

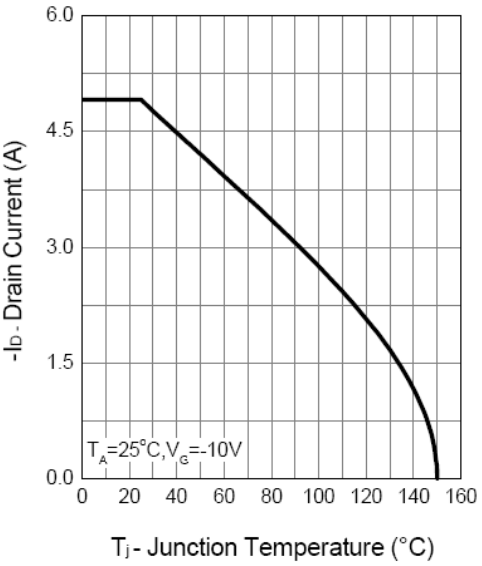




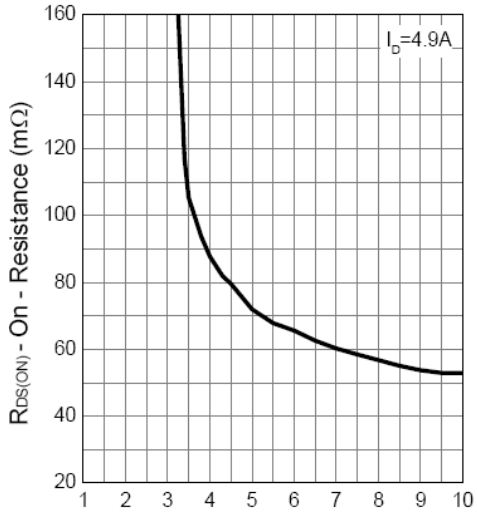
Power Dissipation



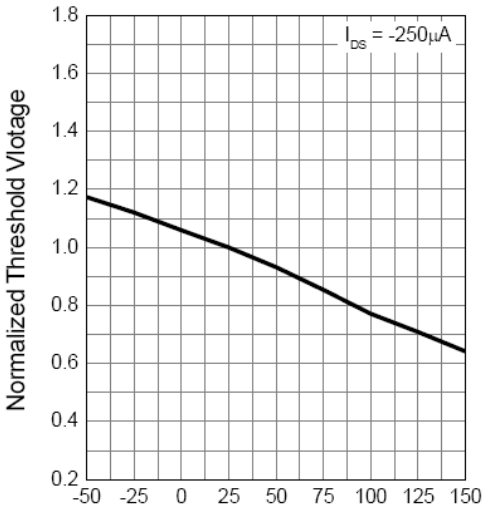
Drain Current



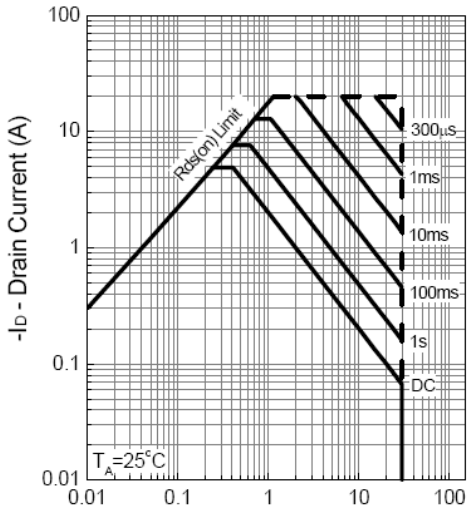
Drain-Source On Resistance



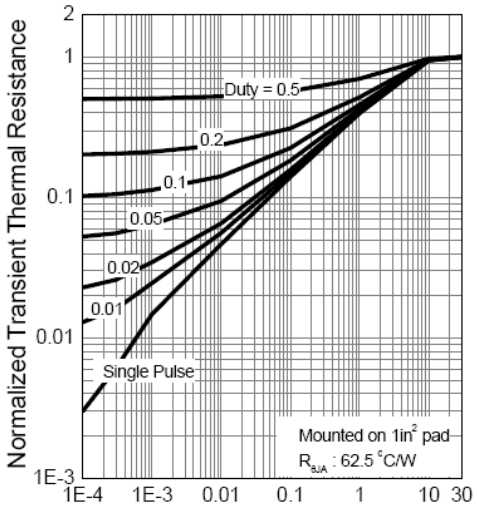
Gate Threshold Voltage



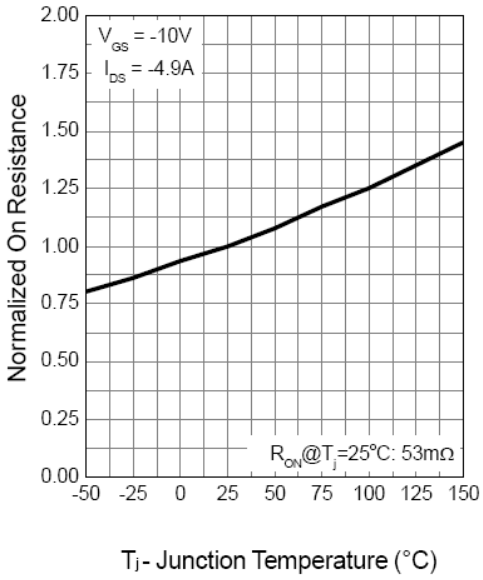
Safe Operation Area



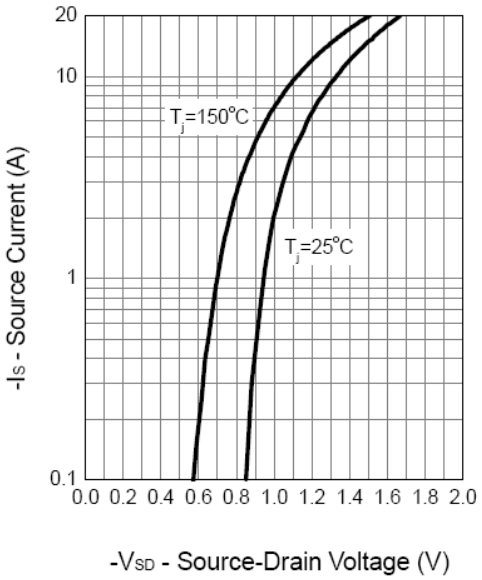
Thermal Transient Impedance



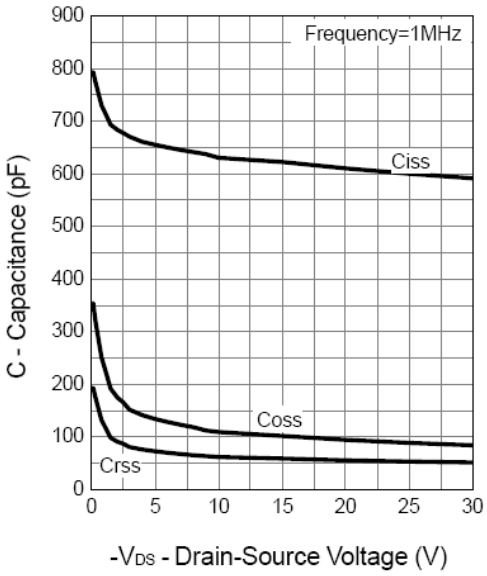
Drain-Source On Resistance



Source-Drain Diode Forward



Capacitance



Gate Charge