

GSS4953**P-CHANNEL ENHANCEMENT MODE POWER MOSFET**

BVDSS	-30V
RDS(ON)	53mΩ
ID	-5A

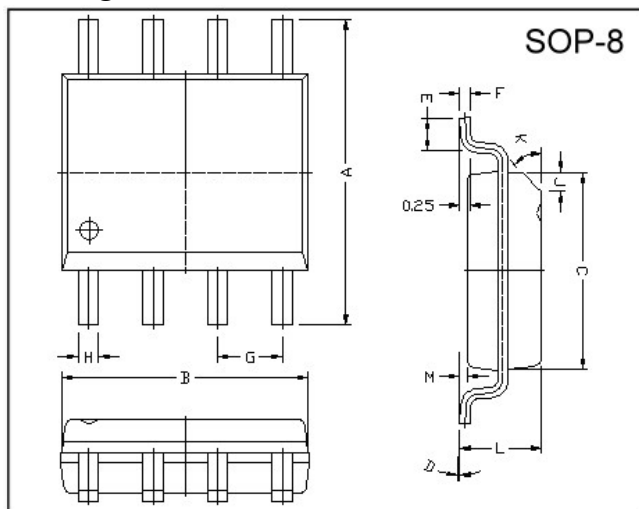
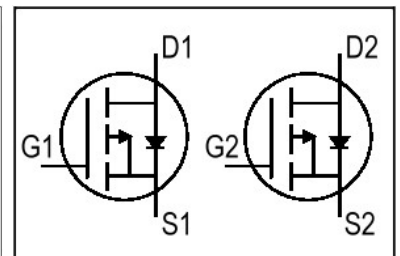
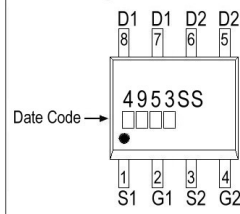
Description

The GSS4953 provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness.

The SOP-8 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

Features

- *Simple Drive Requirement
- *Lower On-resistance
- *Fast Switching

Package Dimensions**Marking :**

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	M	0.10	0.25
B	4.80	5.00	H	0.35	0.49
C	3.80	4.00	L	1.35	1.75
D	0°	8°	J	0.375 REF.	
E	0.40	0.90	K	45°	
F	0.19	0.25	G	1.27 TYP.	

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 16	V
Continuous Drain Current ¹	$I_D @ T_A = 25^\circ C$	-5	A
Continuous Drain Current ¹	$I_D @ T_A = 70^\circ C$	-4	A
Pulsed Drain Current ²	I_{DM}	-20	A
Total Power Dissipation ¹	$P_D @ T_A = 25^\circ C$	2	W
Linear Derating Factor		0.02	W/°C
Operating Junction and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-ambient ¹ Max.	$R_{thj-amb}$	62.5	°C/W

Electrical Characteristics ($T_j = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-30	-	-	V	$V_{GS}=0, I_D=-250\mu\text{A}$
Gate Threshold Voltage	$V_{GS(th)}$	-1.0	-	-2.5	V	$V_{DS}=V_{GS}, I_D=-250\mu\text{A}$
Forward Transconductance ²	g_{fs}	-	5	-	S	$V_{DS}=-5\text{V}, I_D=-5\text{A}$
Gate-Source Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{GS}=\pm 16\text{V}$
Drain-Source Leakage Current	I_{DSS}	-	-	-1	μA	$V_{DS}=-24\text{V}, V_{GS}=0$
Static Drain-Source On-Resistance ²	$R_{DS(ON)}$	-	-	53	m Ω	$V_{GS}=-10\text{V}, I_D=-5\text{A}$
		-	-	90		$V_{GS}=-4.5\text{V}, I_D=-4\text{A}$
Total Gate Charge ²	Q_g	-	11.7	-	nC	$I_D=-5\text{A}$ $V_{DS}=-15\text{V}$ $V_{GS}=-10\text{V}$
Gate-Source Charge	Q_{gs}	-	2.1	-		
Gate-Drain ("Miller") Change	Q_{gd}	-	2.9	-		
Turn-on Delay Time ²	$T_{d(on)}$	-	9	-	ns	$V_{DS}=-15\text{V}$ $I_D=-1\text{A}$ $V_{GS}=-10\text{V}$ $R_G=6\Omega$ $R_D=15\Omega$
Rise Time	T_r	-	10	-		
Turn-off Delay Time	$T_{d(off)}$	-	37	-		
Fall Time	T_f	-	23	-		
Input Capacitance	C_{iss}	-	582	-	pF	$V_{GS}=0\text{V}$ $V_{DS}=-15\text{V}$ $f=1.0\text{MHz}$
Output Capacitance	C_{oss}	-	125	-		
Reverse Transfer Capacitance	C_{rss}	-	86	-		

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage ²	V_{SD}	-	-0.84	-1.2	V	$I_S=-1.7\text{A}, V_{GS}=0\text{V}$

Notes: 1. Surface Mounted on FR4 Board, $t \leq 10\text{sec}$.2. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

Characteristics Curve

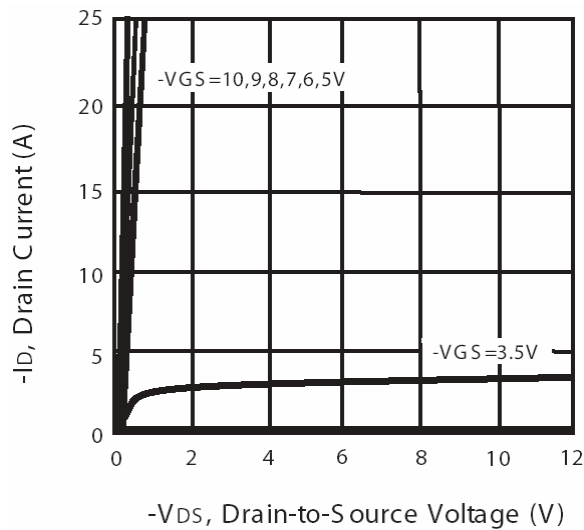


Fig 1. Typical Output Characteristics

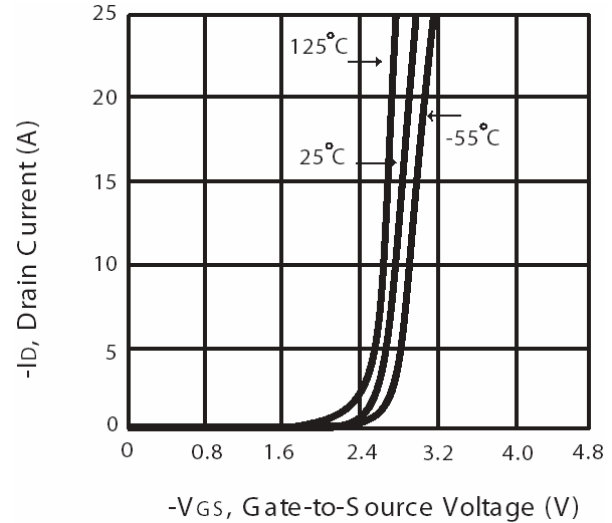


Fig 2. Transfer Characteristics

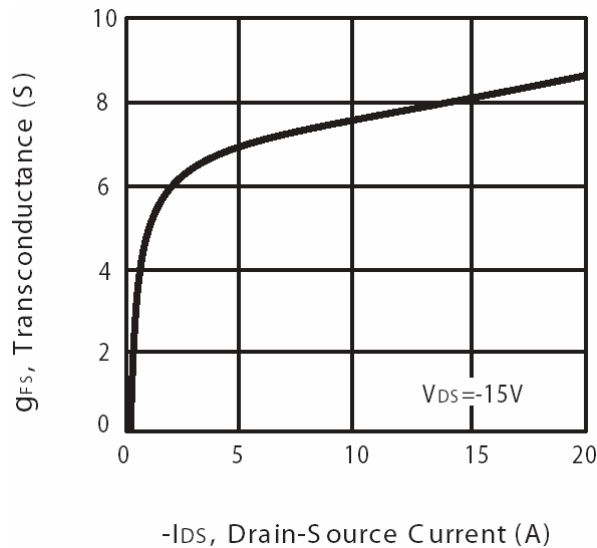


Fig 3. Transconductance v.s. Drain Current

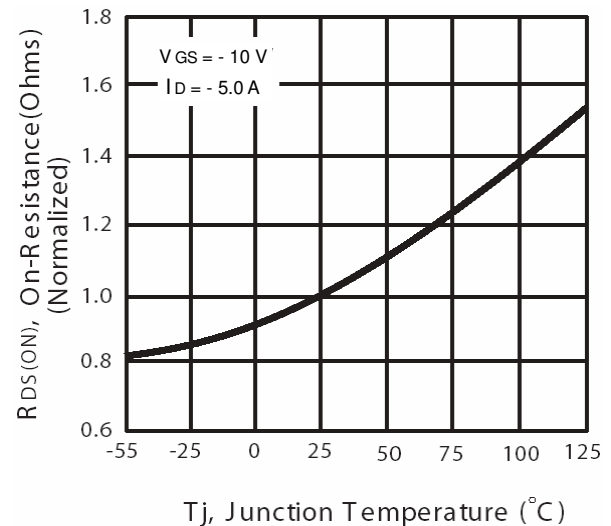


Fig 4. On-Resistance v.s. Junction Temperature

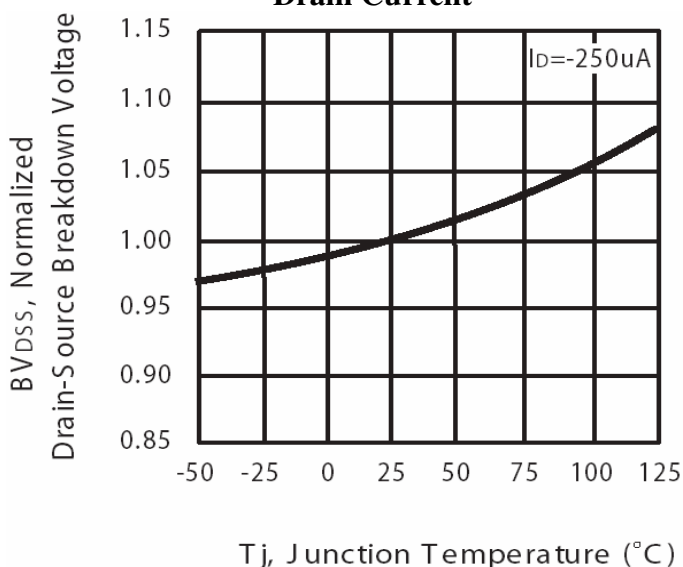


Fig 5. Breakdown Voltage v.s. Junction Temperature

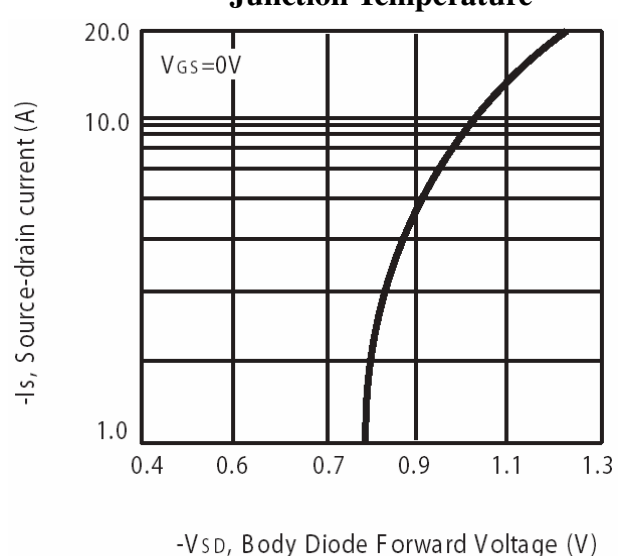
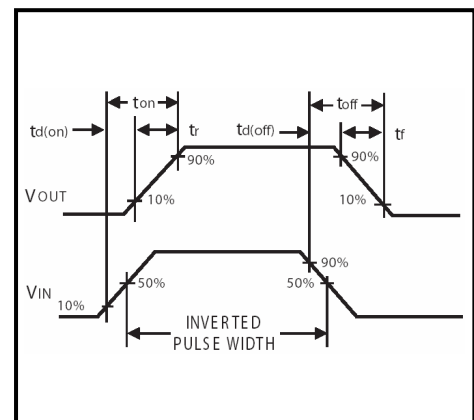
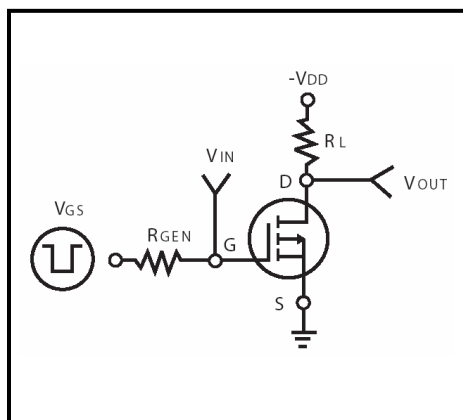
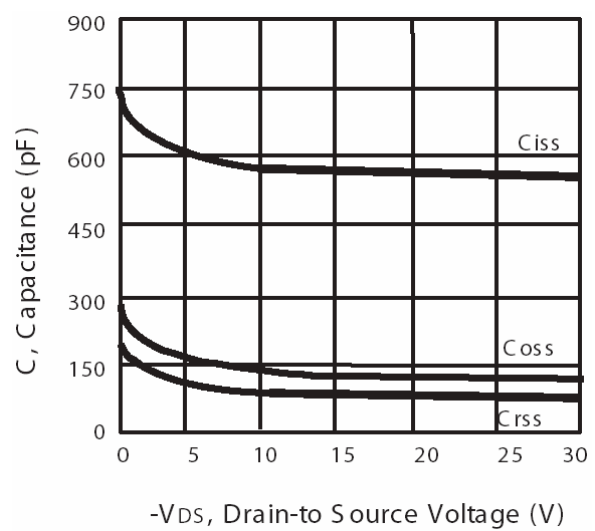
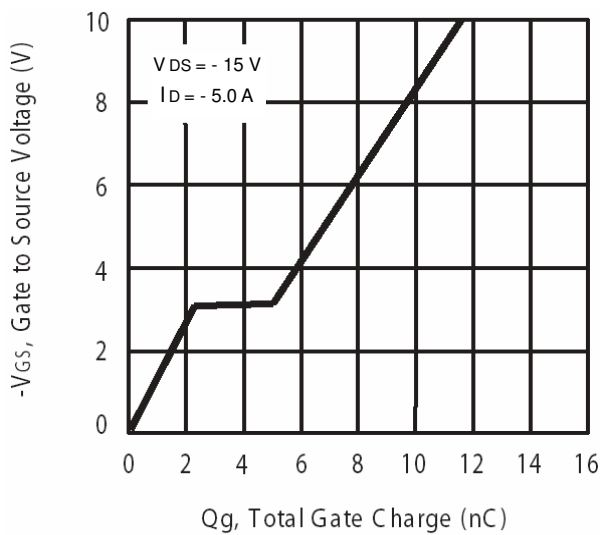
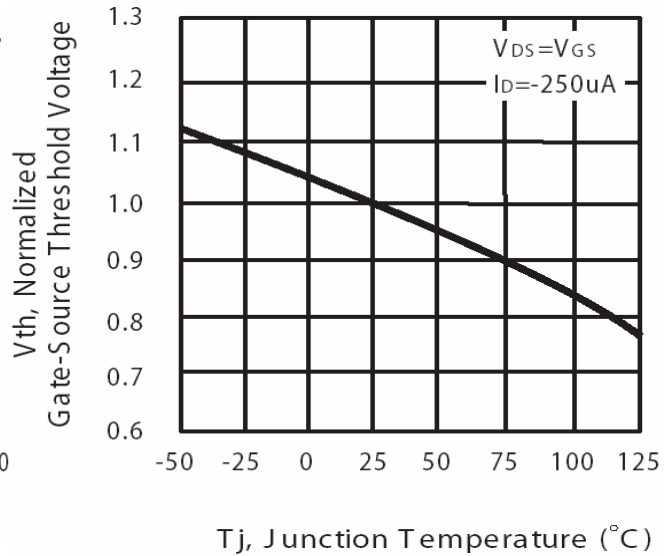
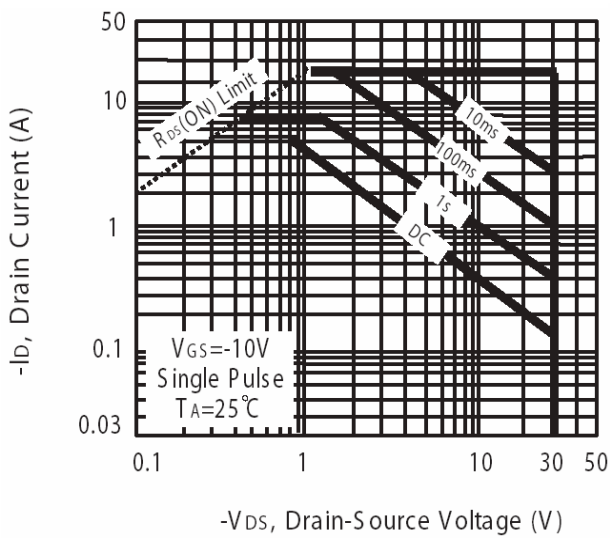


Fig 6. Body Diode Forward Voltage v.s. Source Current



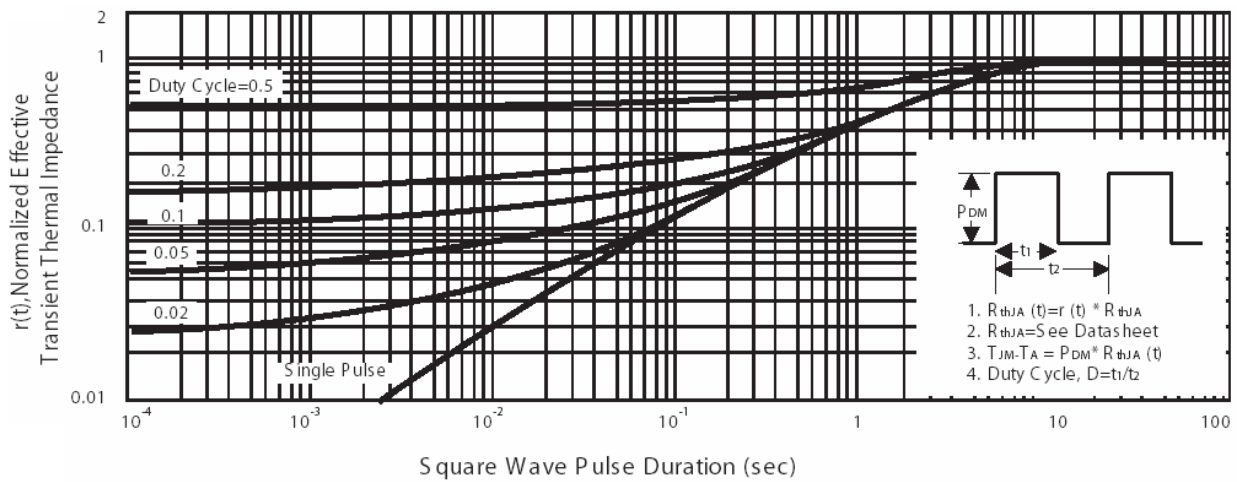


Fig 13. Normalized Thermal Transient Impedance Curve

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Head Office And Factory:

- **Taiwan:** No. 17-1 Tatung Rd. Fu Kou Hsin-Chu Industrial Park, Hsin-Chu, Taiwan, R. O. C.
TEL : 886-3-597-7061 FAX : 886-3-597-9220, 597-0785
- **China:** (201203) No.255, Jang-Jiang Tsai-Lueng RD. , Pu-Dung-Hsin District, Shang-Hai City, China
TEL : 86-21-5895-7671 ~ 4 FAX : 86-21-38950165