

General Description

The HSSK2905 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and high density cell design for ultra low on-resistance. This device is suitable for use as a load switch or in PWM applications.

ESD Protected.

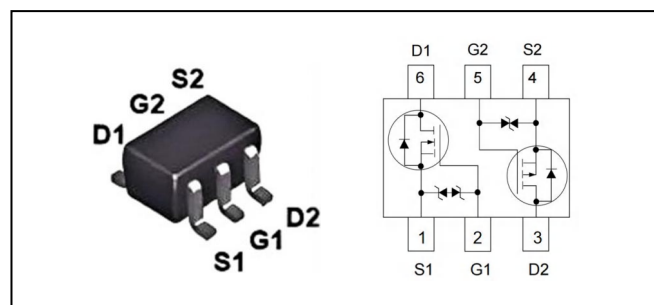
Applications

- PWM applications
- Load switch

Product Summary

BVDSS	$R_{DS(ON)}$	ID
20V	0.3 Ω	0.6A
-55V	0.9 Ω	-0.8A

SOT-363 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating		Units
		N-Channel	P-Channel	
V_{DS}	Drain-Source Voltage	20	-20	V
V_{GS}	Gate-Source Voltage	± 8	± 8	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current	0.6	-0.8	A
I_{DM}	Pulsed Drain Current	3.0	-3.0	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation	0.17	0.25	W
T_{STG}	Storage Temperature Range	-55 to 150	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	---	380	$^\circ\text{C/W}$

N-Channel Electrical Characteristics ($T_J=25\text{ }^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	20	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance ²	$V_{GS}=4.0V$, $I_D=0.3A$	---	0.3	0.5	Ω
		$V_{GS}=2.5V$, $I_D=0.2A$	---	0.45	0.7	
		$V_{GS}=1.8V$, $I_D=0.15A$	---	0.6	0.9	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	0.5	---	1.1	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=20V$, $V_{GS}=0V$, $T_J=25^{\circ}\text{C}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 8V$, $V_{DS}=0V$	---	---	± 10	μA
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=10V$, $V_{GS}=4.5V$, $R_G=10\Omega$, $I_D=0.2A$	---	---	16	ns
$T_{d(off)}$	Turn-Off Delay Time		---	---	54	
C_{iss}	Input Capacitance	$V_{DS}=16V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	140	---	pF
C_{oss}	Output Capacitance		---	27	---	
C_{rss}	Reverse Transfer Capacitance		---	20	---	

P-Channel Electrical Characteristics ($T_J=25\text{ }^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-20	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-4.5V$, $I_D=-0.2A$	---	0.9	1.2	Ω
		$V_{GS}=-2.5V$, $I_D=-0.1A$	---	1.2	1.5	
		$V_{GS}=-1.8V$, $I_D=-0.1A$	---	1.5	2.2	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu A$	-0.5	---	-1.1	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-20V$, $V_{GS}=0V$, $T_J=25^{\circ}\text{C}$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 8V$, $V_{DS}=0V$	---	---	± 10	μA
g_{fs}	Forward Transconductance	$V_{GS}=-5V$, $I_D=-0.05A$, $T_A=125^{\circ}\text{C}$	---	6.5	---	S
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=-6V$, $V_{GS}=-4.5V$, $R_L=6\Omega$, $I_D=-1A$	---	---	20	ns
$T_{d(off)}$	Turn-Off Delay Time		---	---	68	
C_{iss}	Input Capacitance	$V_{DS}=-6V$, $V_{GS}=0V$, $f=200\text{KHz}$	---	220	---	pF
C_{oss}	Output Capacitance		---	90	---	
C_{rss}	Reverse Transfer Capacitance		---	140	---	

N-Ch and P-Ch Fast Switching MOSFETs

N-Channel Typical Characteristics

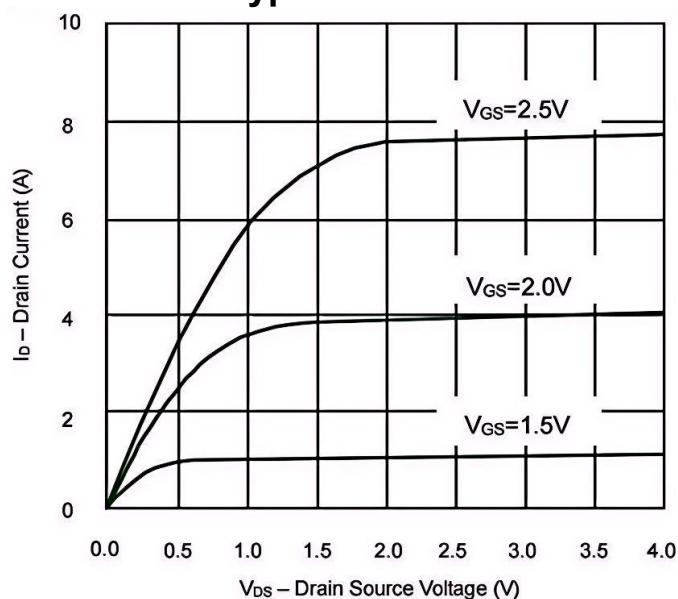


Fig.1 Typical Output Characteristics

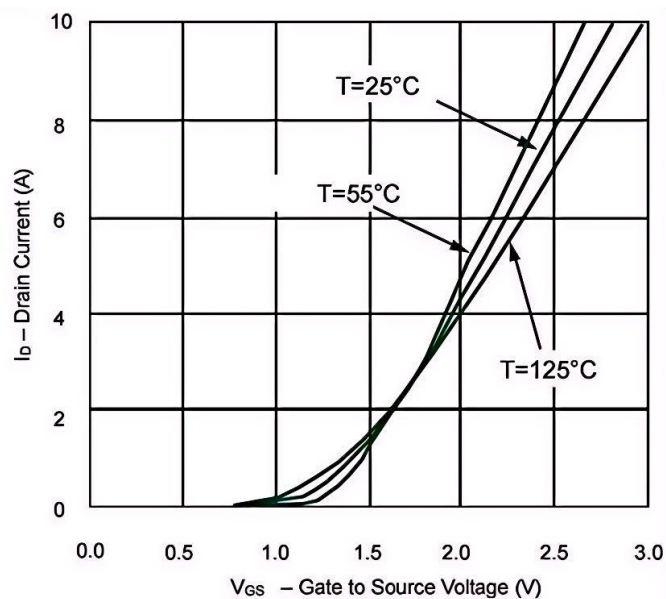


Fig.2 Transfer Characteristics

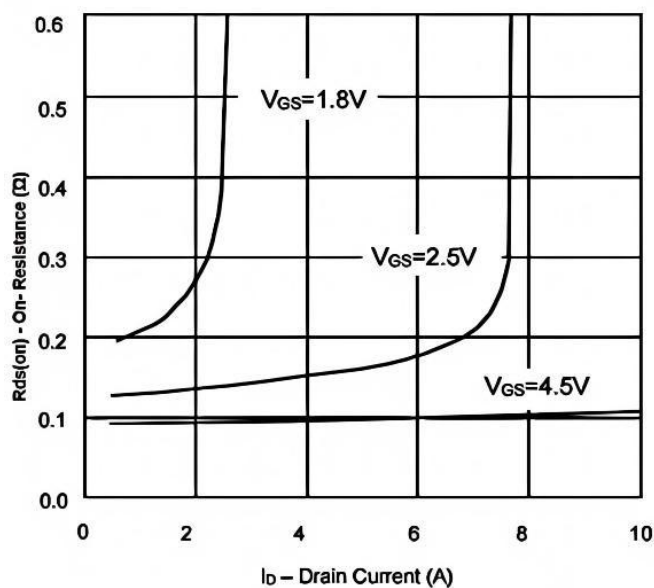


Fig.3 On-Resistance vs. Drain Current

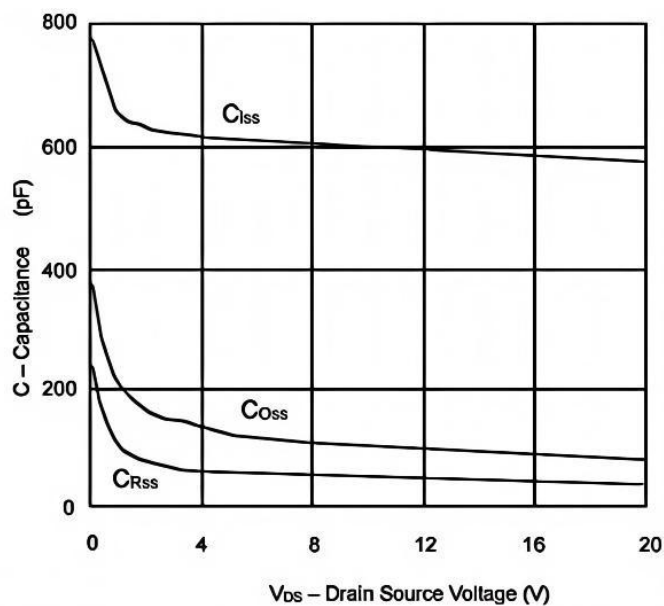


Fig.4 Capacitance

P-Channel Typical Characteristics

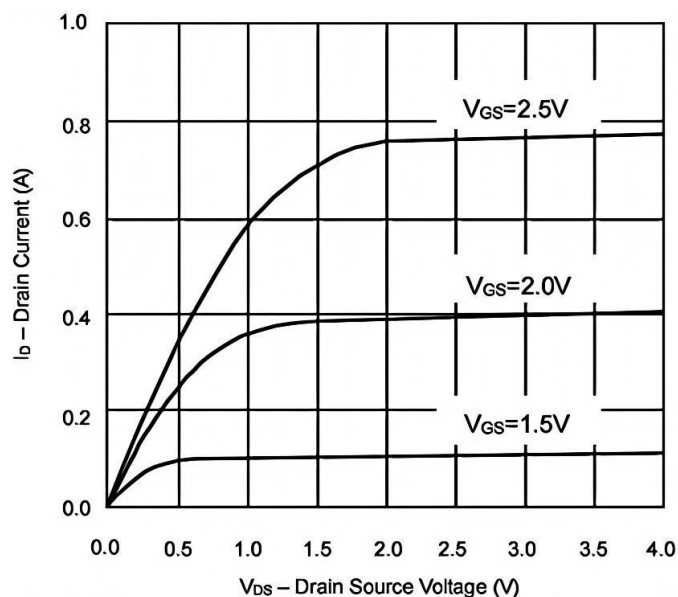


Fig.1 Typical Output Characteristics

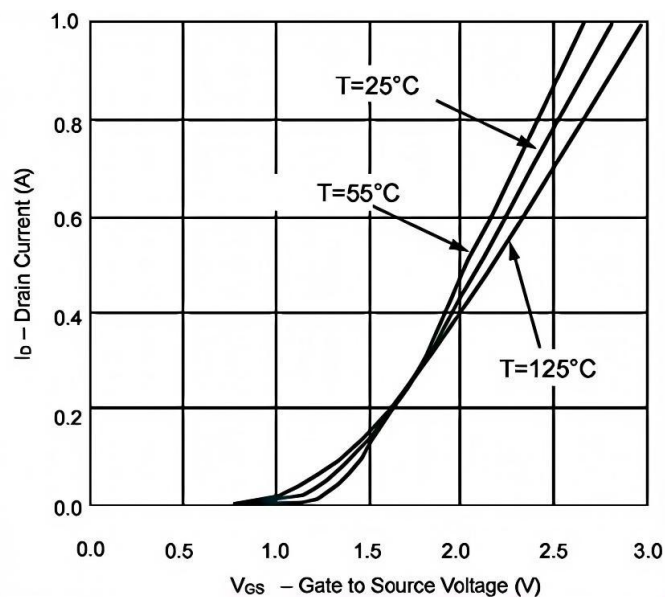


Fig.2 Transfer Characteristics

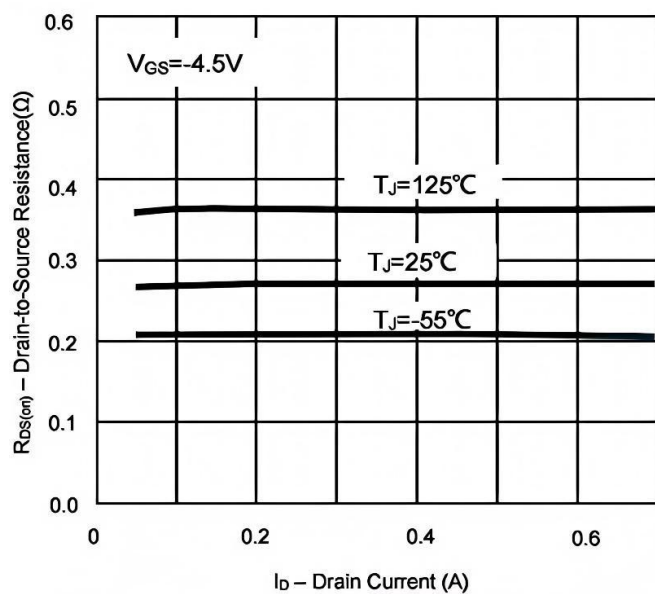


Fig.3 On-Resistance vs. Drain Current

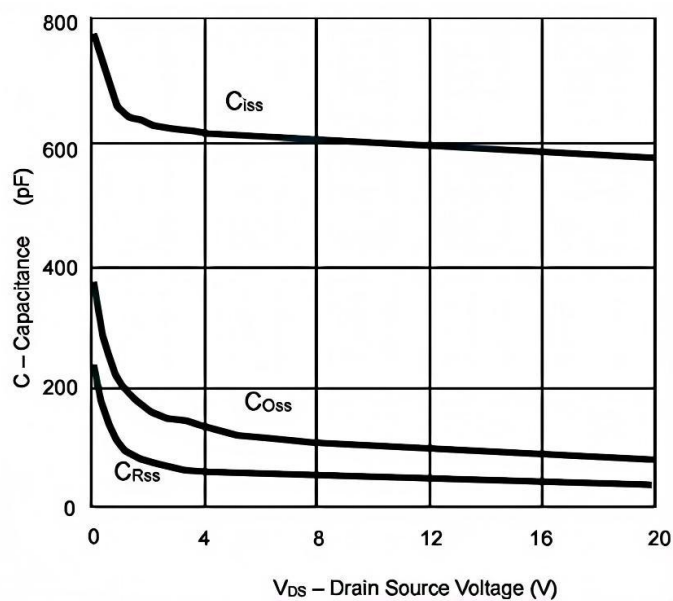
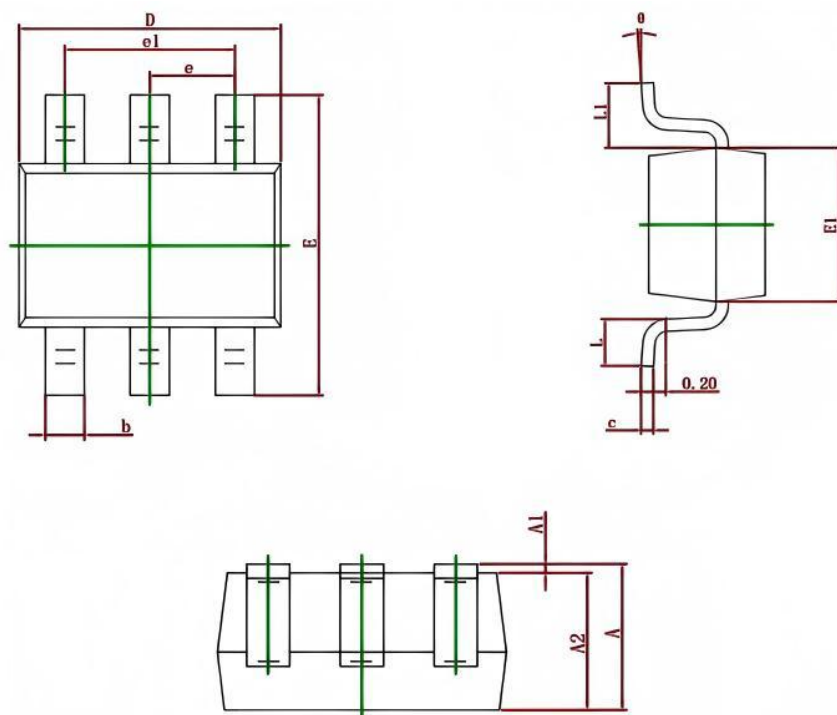


Fig.4 Capacitance

Ordering Information

Part Number	Package code	Packaging
HSSK2905	SOT-363	3000/Tape&Reel

SOT-363 Package Outline



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
C	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	2.150	2.450	0.085	0.096
E1	1.150	1.350	0.045	0.053
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.260	0.460	0.010	0.018
L1	0.525 REF.		0.021 REF.	
θ	0°	8°	0°	8°



HSSK2905 TOP Marking

