

General Description

We declare that the material of product compliance with Rohs requirements and Halogen Free.
ESD protected
Low RDS(on)

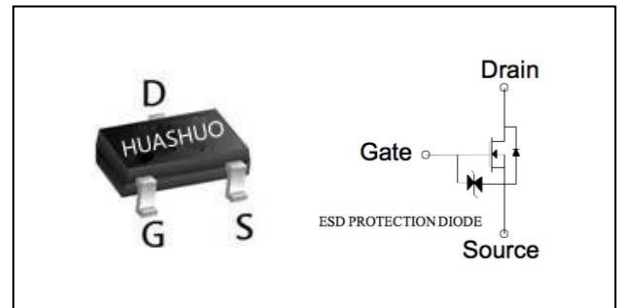
Product Summary

V_{DS}	60	V
$R_{DS(ON),typ}$	1	Ω
I_D	0.3	A

Features

- Low side load switch
- Level shift circuitis
- DC-DC converter
- Portable applications i.e. DSC, PDA, Cell Phone, etc.

SOT-23S Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 10V^1$	300	mA
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 10V^1$	190	mA
I_{DM}	Pulsed Drain Current ²	1	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation ³	0.35	W
T_{STG}	Storage Temperature Range	-40 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-40 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient ¹	---	350	$^\circ\text{C/W}$



Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	60	---	---	V
ΔBV _{DSS} /ΔT _J	BV _{DSS} Temperature Coefficient	Reference to 25°C, I _D =1mA	---	0.054	---	V/°C
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =200mA	---	1	2.8	Ω
		V _{GS} =4.5V, I _D =100mA	---	1.3	3.6	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1.2	1.4	2.5	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient		---	-4.96	---	mV/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =48V, V _{GS} =0V, T _J =25°C	---	---	1	uA
		V _{DS} =48V, V _{GS} =0V, T _J =55°C	---	---	5	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±16V, V _{DS} =0V	---	---	±30	uA
g _{fs}	Forward Transconductance	V _{DS} =50V, I _D =200mA	---	0.18	---	S
Q _g	Total Gate Charge (4.5V)	V _{DS} =0.5V, V _{GS} =10V, I _D =200mA	---	1.0	---	nC
Q _{gs}	Gate-Source Charge		---	0.4	---	
Q _{gd}	Gate-Drain Charge		---	1	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30V, V _{GEN} =10V, R _G =25Ω, I _D =500mA, R _L =60Ω,	---	2.7	---	ns
T _r	Rise Time		---	2.5	---	
T _{d(off)}	Turn-Off Delay Time		---	13	---	
T _f	Fall Time		---	8	---	
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	38	---	pF
C _{oss}	Output Capacitance		---	5	---	
C _{rss}	Reverse Transfer Capacitance		---	2	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current ^{1,4}	V _G =V _D =0V, Force Current	---	---	300	mA
I _{SM}	Pulsed Source Current ^{2,4}		---	---	1	A
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V, I _S =0.5A, T _J =25°C	---	---	0.85	V

Note :

1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.

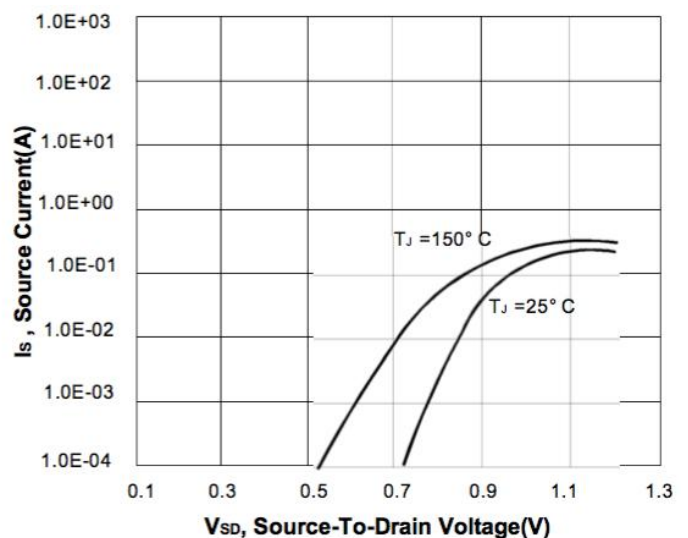
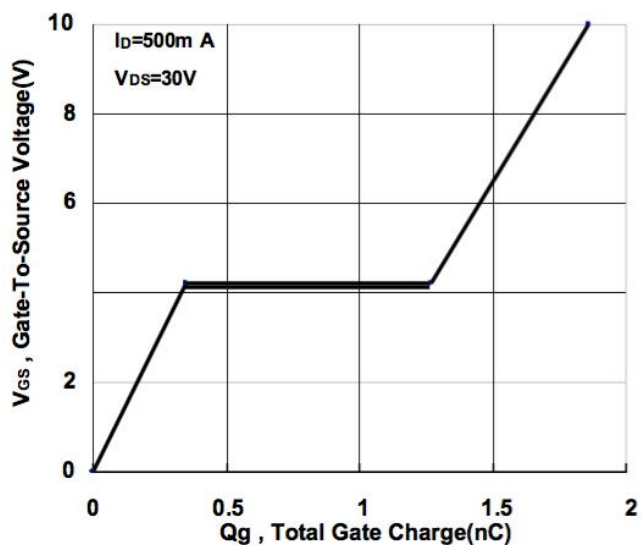
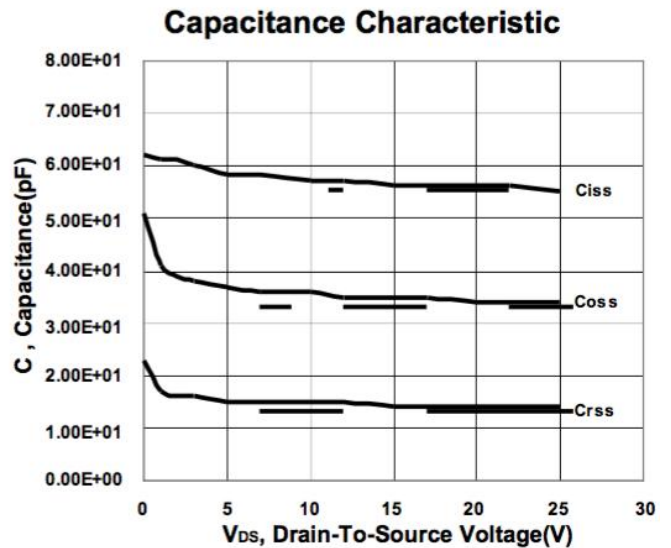
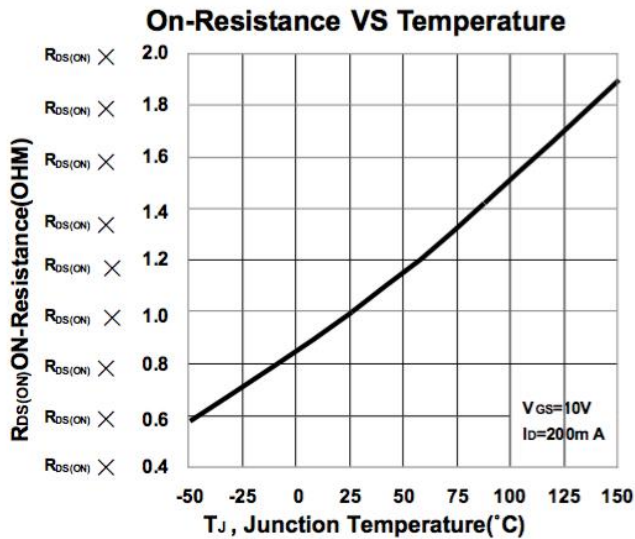
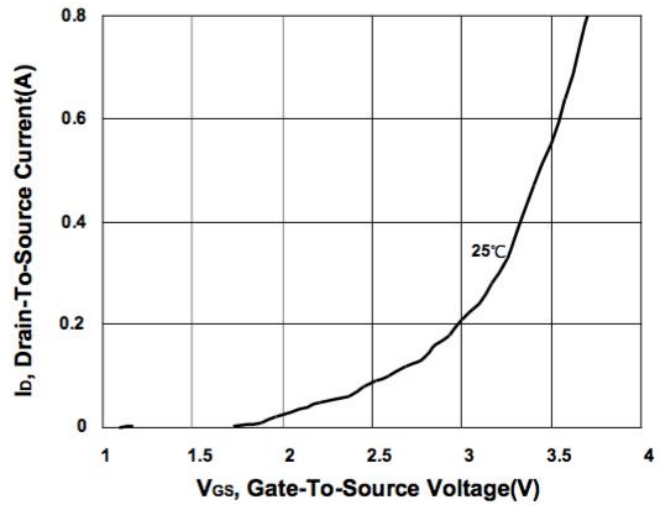
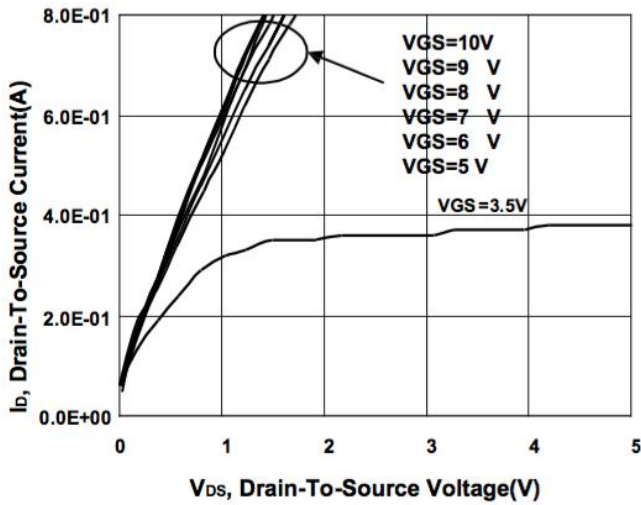
2.The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%

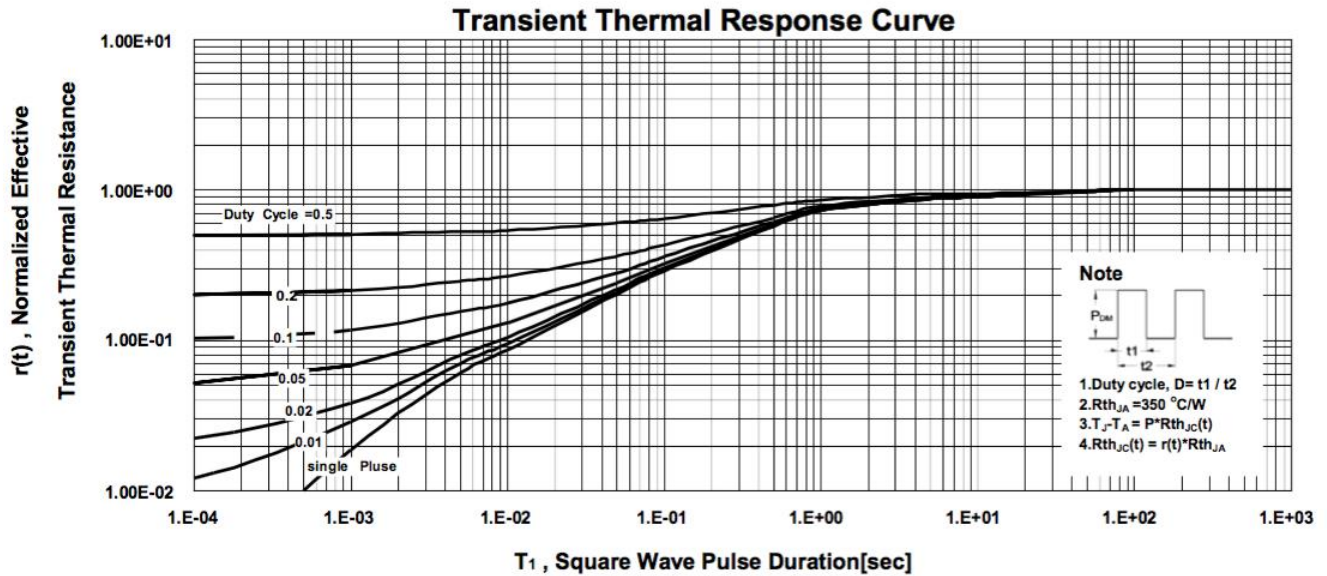
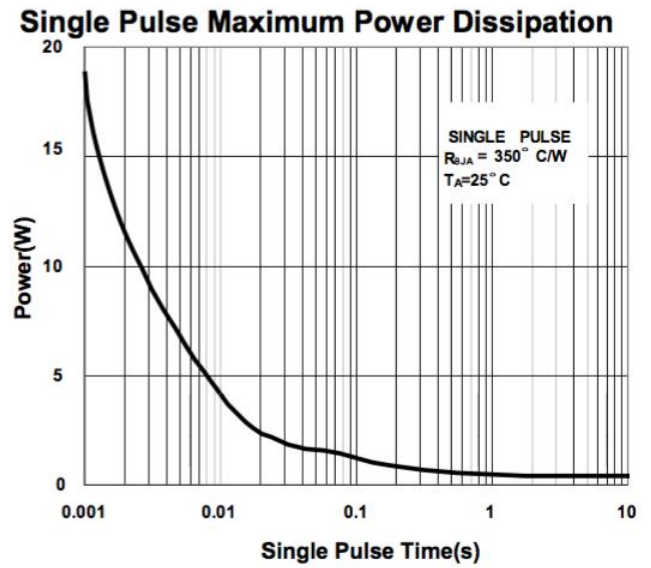
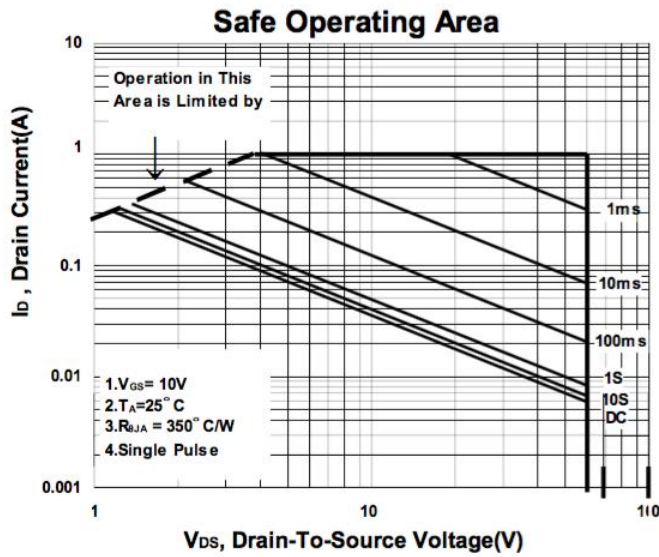
3.The power dissipation is limited by 150°C junction temperature.

4.The data is theoretically the same as I_D and I_{DM}, in real applications, should be limited by total power dissipation.



Typical Characteristics



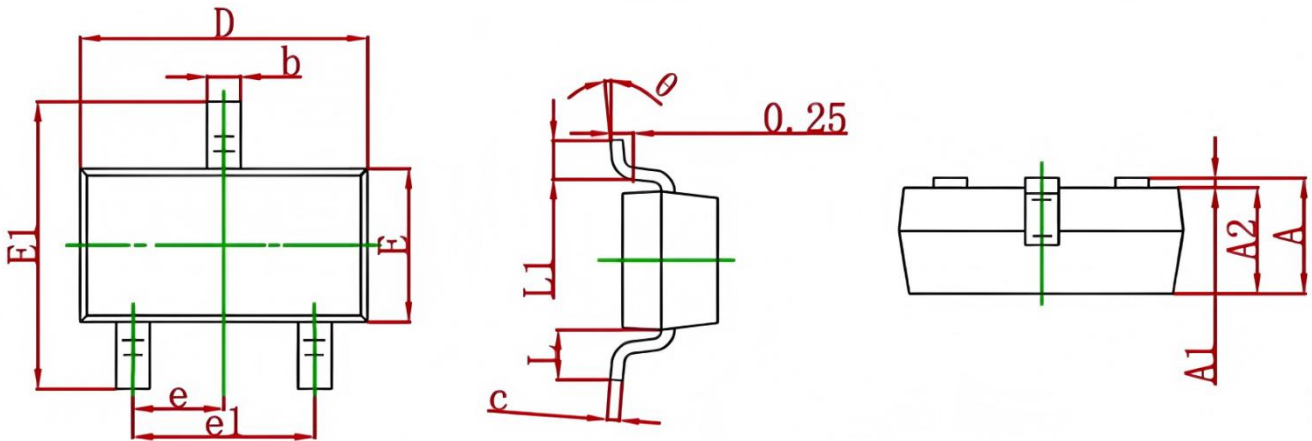




Ordering Information

Part Number	Package code	Packaging
HSS2N7002K	SOT-23S	3000/Tape&Reel

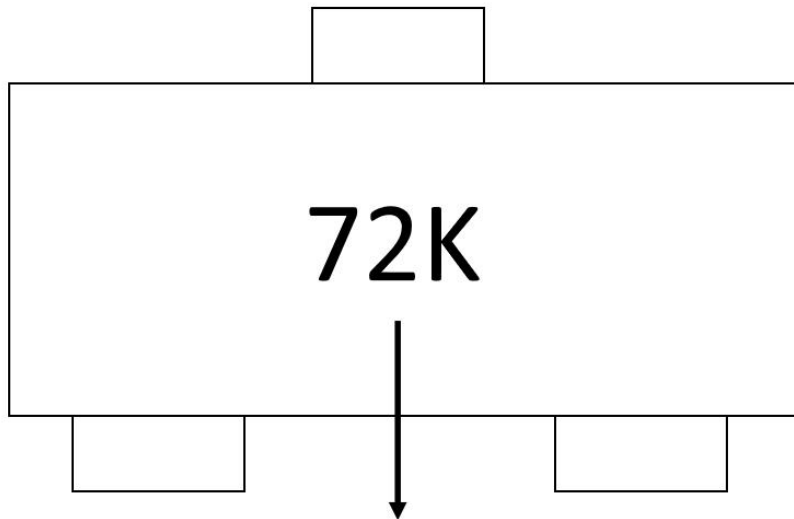
SOT-23S Package Outline



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
C	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°



HSS2N7002K TOP Marking



Part Number