

General Description

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

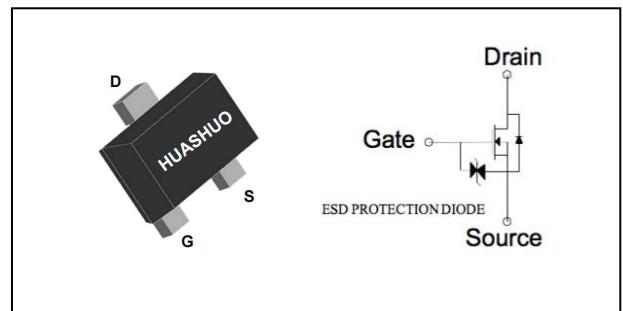
Product Summary

V_{DS}	60	V
$R_{DS(ON),Max}$	2.0	Ω
I_D	0.21	A

Applications

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

SOT-723 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_A=25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V^1$	0.21	A
$I_D@T_A=70^\circ C$	Continuous Drain Current, $V_{GS} @ 10V^1$	0.17	mA
I_{DM}	Pulsed Drain Current ²	0.8	A
$P_D@T_A=25^\circ C$	Total Power Dissipation ⁴	0.16	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient ³	---	800	$^\circ C/W$



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
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V , I _D =300mA	---	1.4	2.0	Ω
		V _{GS} =4.5V , I _D =200mA	---	1.6	2.4	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	1.5	2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =60V , V _{GS} =0V , T _J =25°C	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V , V _{DS} =0V	---	---	±10	uA
Q _g	Total Gate Charge	V _{DS} =10V , V _{GS} =4.5V , I _D =200mA	---	0.85	---	nC
Q _{gs}	Gate-Source Charge		---	0.6	---	
Q _{gd}	Gate-Drain Charge		---	0.15	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30V , V _{GEN} =10V , R _G =3Ω, I _D =200mA	---	4	---	ns
T _r	Rise Time		---	3	---	
T _{d(off)}	Turn-Off Delay Time		---	13	---	
T _f	Fall Time		---	6	---	
C _{iss}	Input Capacitance	V _{DS} =30V , V _{GS} =0V , f=1MHz	---	18	---	pF
C _{oss}	Output Capacitance		---	8	---	
C _{rss}	Reverse Transfer Capacitance		---	4.2	---	

Diode Characteristics

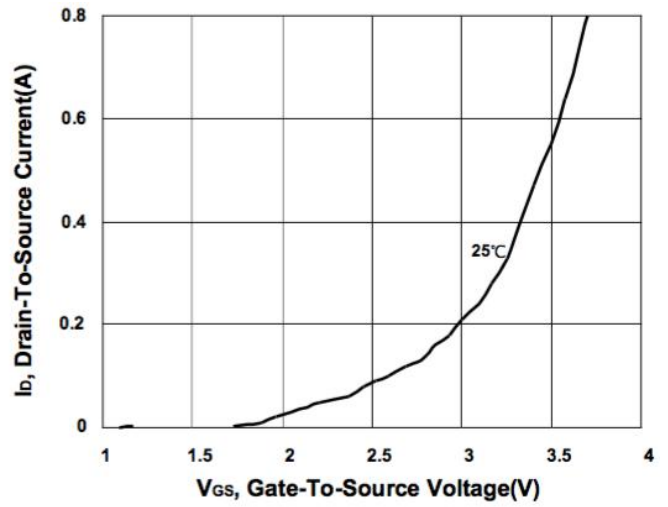
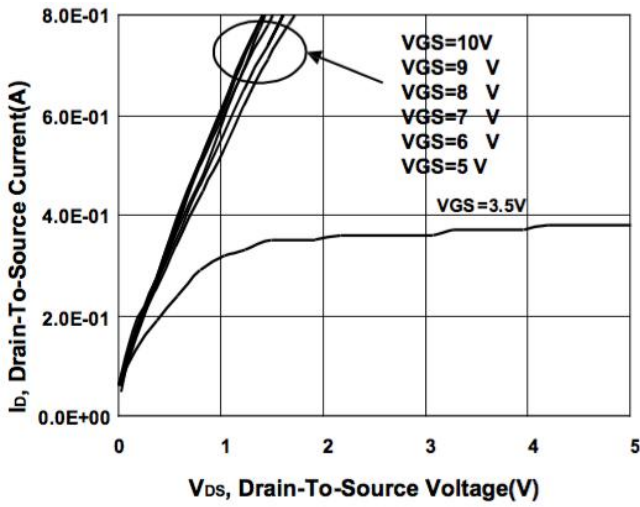
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	0.21	A
I _{SM}	Pulsed Source Current		---	---	1.2	A
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V , I _S =0.21A , T _J =25°C	---	---	1.2	V

Note :

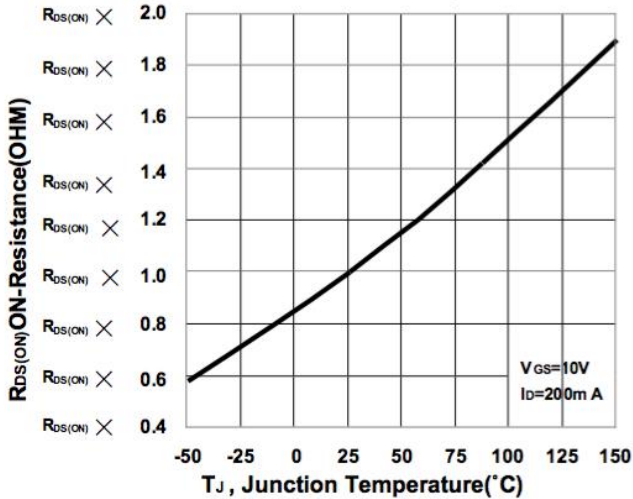
- 1.Pluse width limited by maximum junction temperature.
2. Pulse test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
3. Device surface mounted on FR4 PCB measured at steady state.
4. Measured under pulsed conditions. Pulse width ≤ 300μs, duty cycle ≤ 2%.



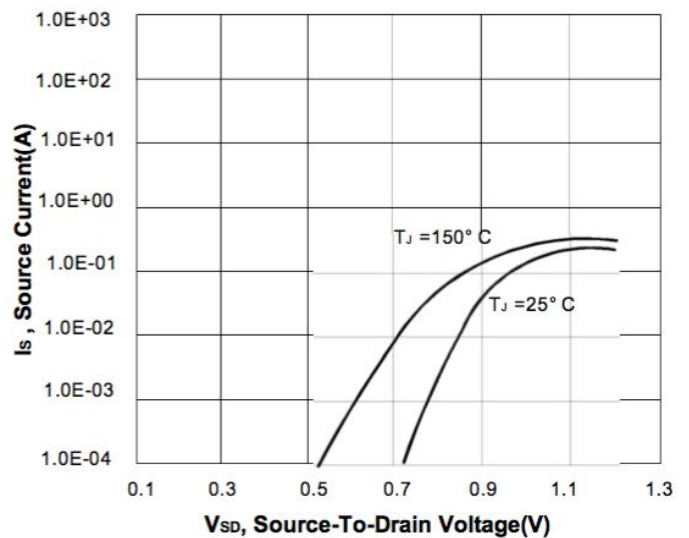
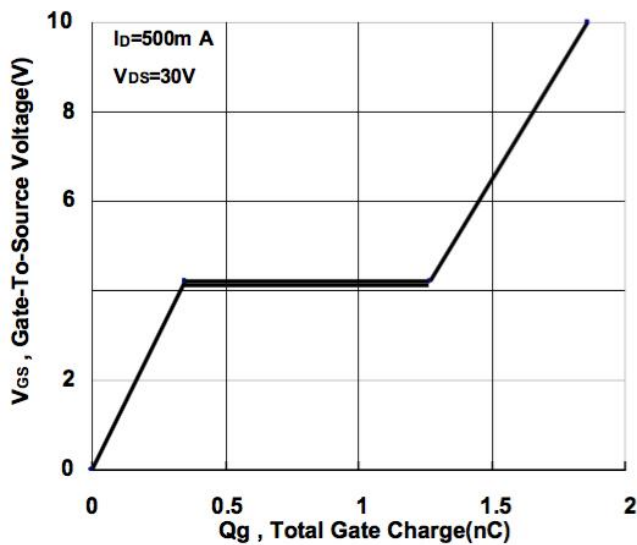
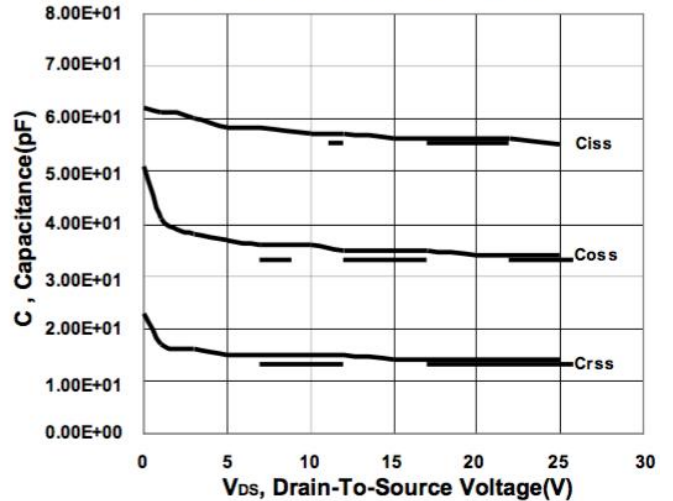
Typical Characteristics

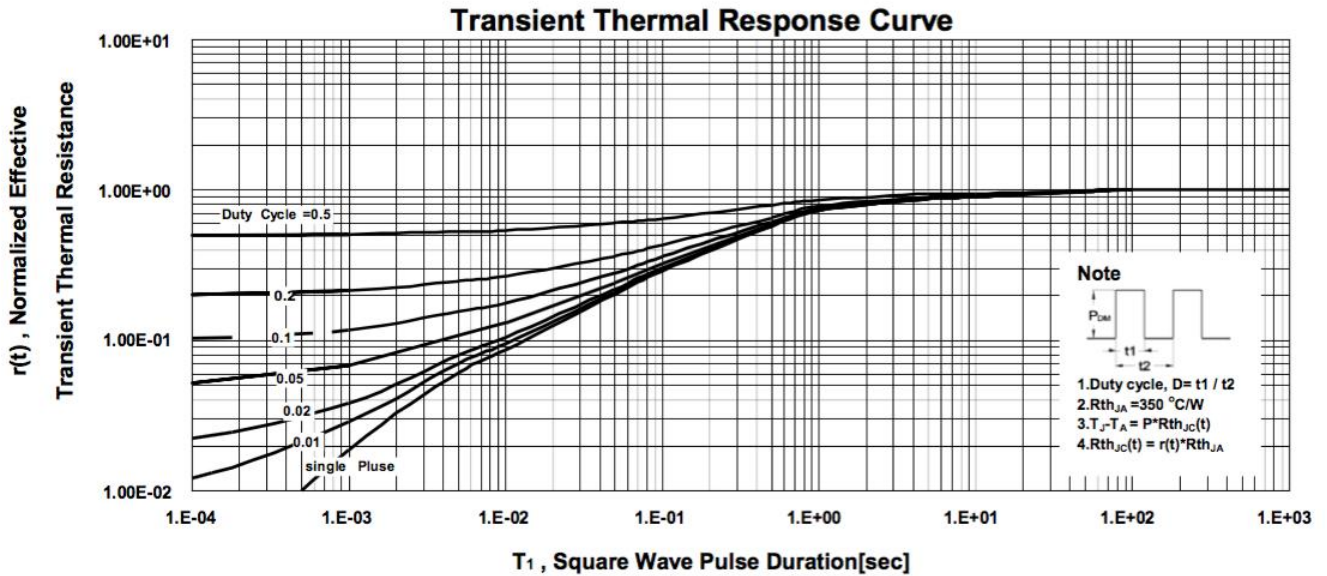
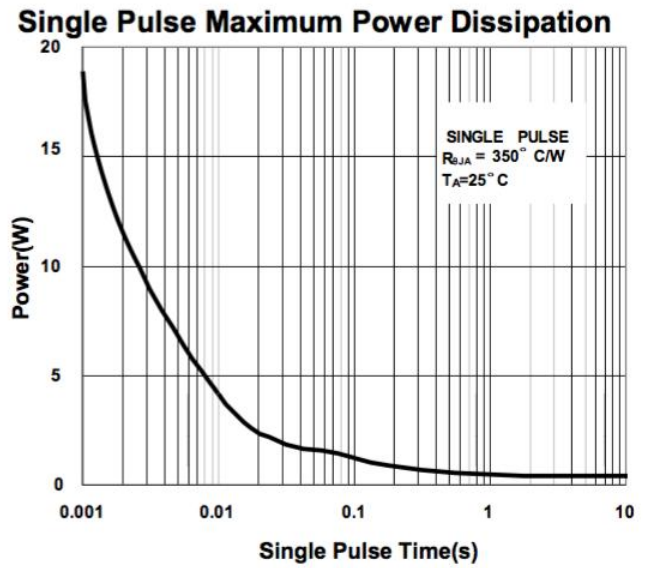
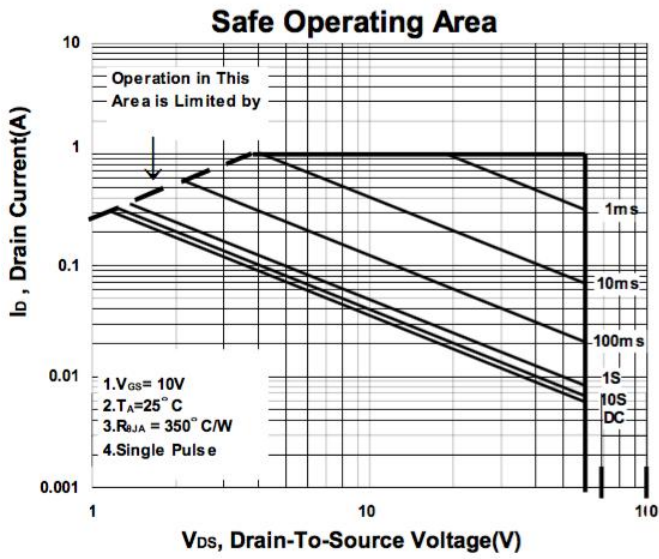


On-Resistance VS Temperature



Capacitance Characteristic



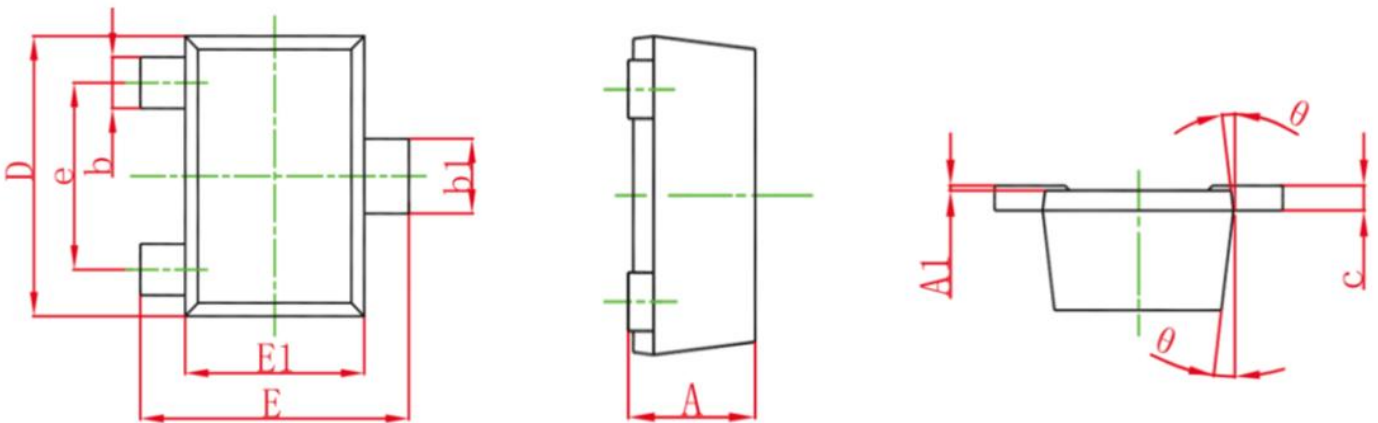




Ordering Information

Part Number	Package code	Packaging
HSSC2N7002K	SOT-723	10000/Tape&Reel

SOT-723 Package Outline



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
C	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7°REF.		7°REF.	



HSSC2N7002K TOP Marking

