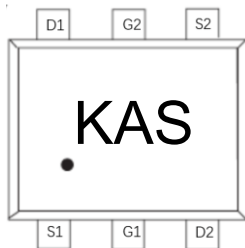


Features

- Dual N-channel MOSFET
- Low gate threshold voltage and low $R_{DS(ON)}$
- Low input capacitance and leakage
- Fast switching speed

Application

- Load Switch for Portable Devices
- DC/DC Converter



KAS: Device code

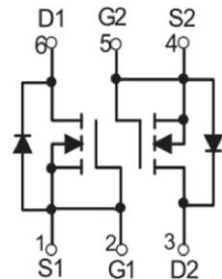
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
60V	0.9Ω@10V	0.3A
	1.1Ω@4.5V	



SOT-563 top view



Schematic diagram



Pb-Free



Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit
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Common Ratings (TC=25°C Unless Otherwise Noted)

V_{DS}	Drain-Source Breakdown Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 155	°C
I_S	Diode Continuous Forward Current	$T_C=25^{\circ}C$ 0.3	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^{\circ}C$ 1.2	A
I_D	Continuous Drain Current	$T_C=25^{\circ}C$ 0.3	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}C$ 0.15	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient	833	°C/W

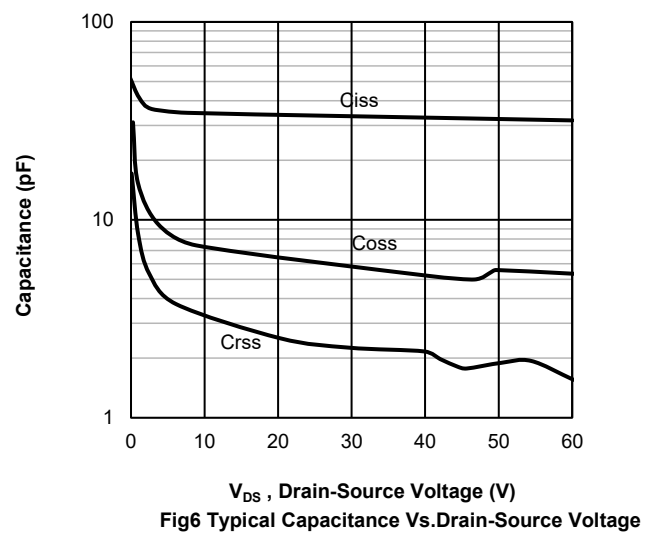
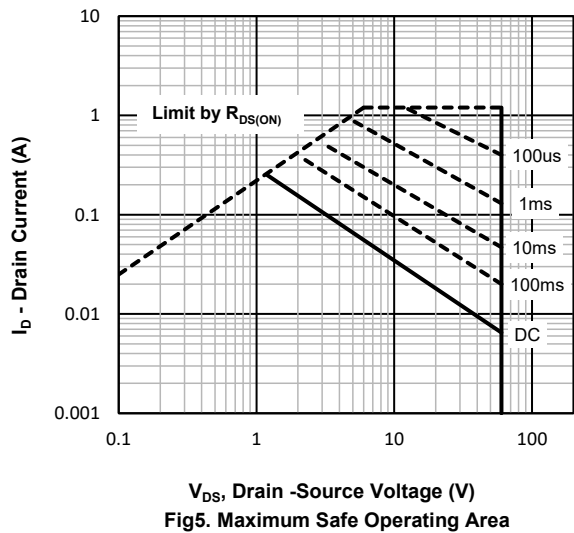
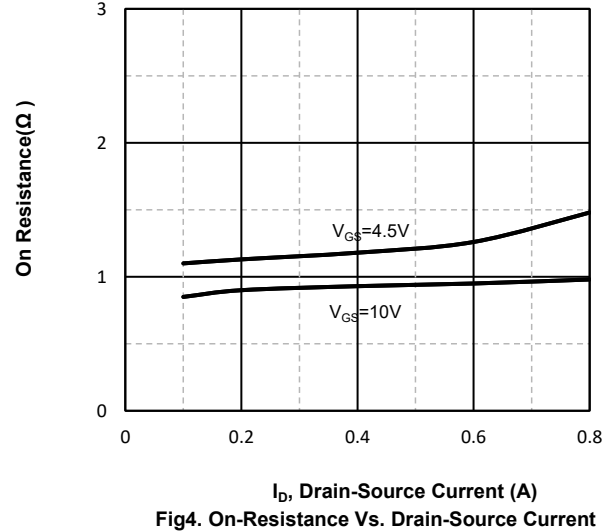
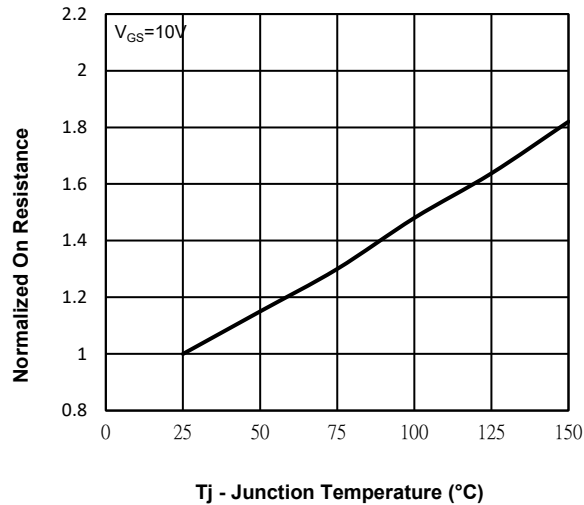
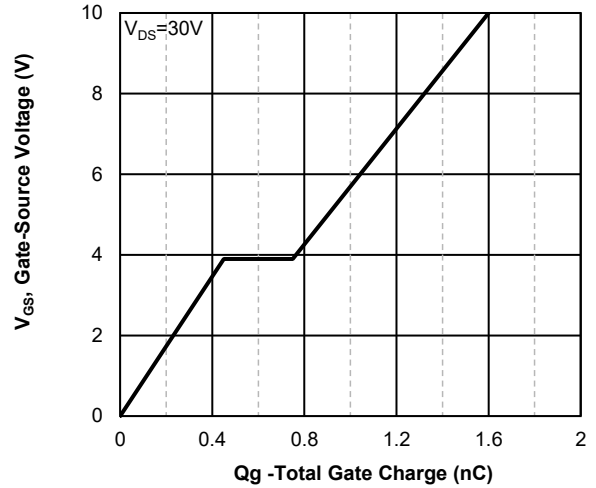
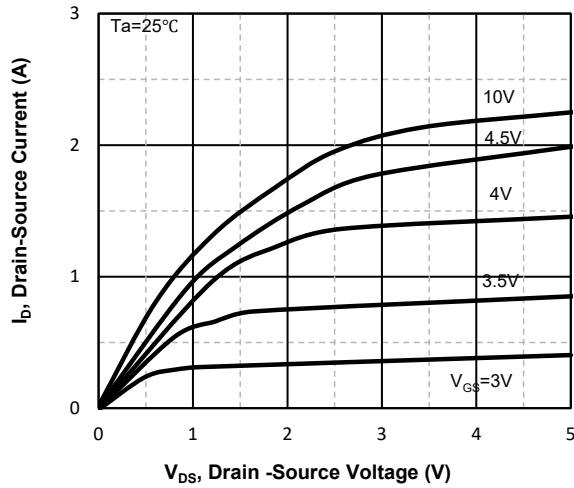
Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
2N7002DT	SOT-563	KAS	3,000	45,000	180,000	7"reel

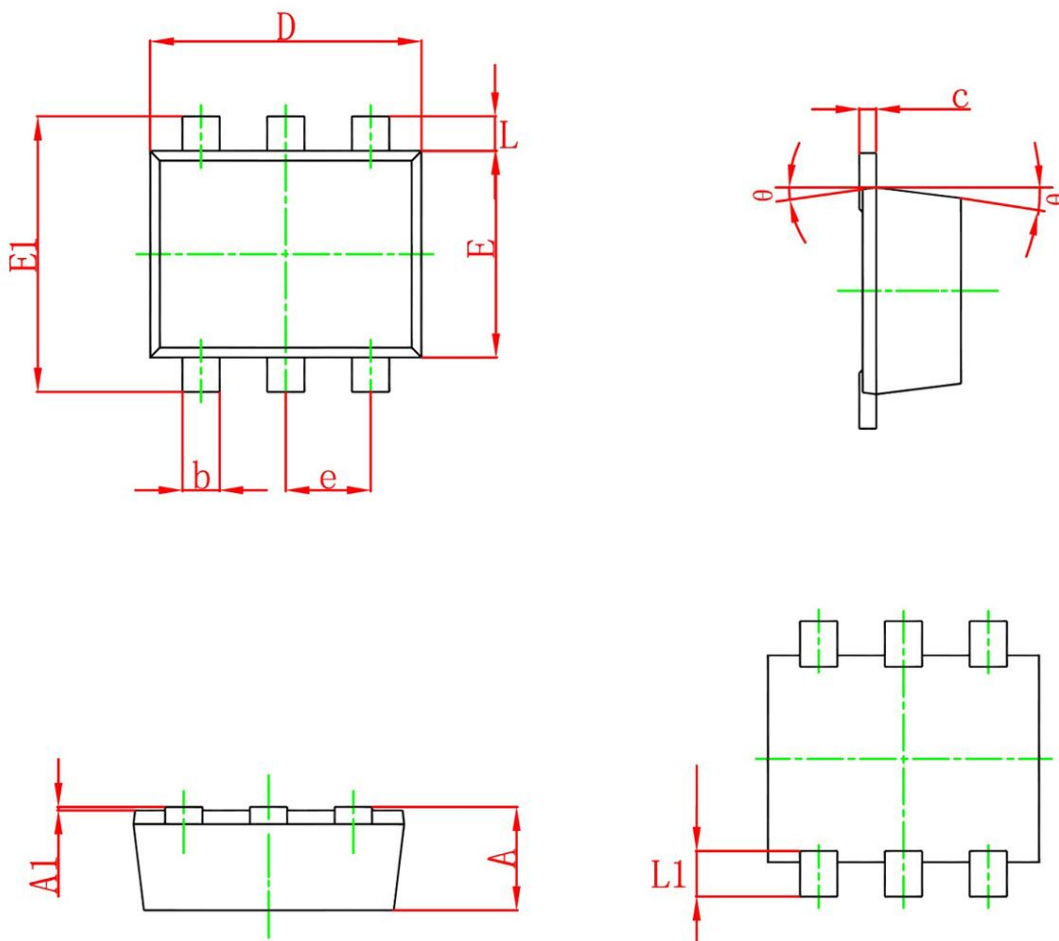
Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV(BR)DSS	Drain-Source Breakdown Voltage	VGS=0V, ID=250μA	60	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=60V, VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	1.0	1.6	2.5	V
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=0.34A	--	0.9	5.0	Ω
		VGS=5V, ID=0.2A	--	1.1	7.0	Ω
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=30V, VGS=0V, f=1MHz	--	27	--	pF
COSS	Output Capacitance		--	2.75	--	pF
CRSS	Reverse Transfer Capacitance		--	2	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=30V, ID=0.34A, VGS=10V	--	1.7	--	nC
Qgs	Gate-Source Charge		--	0.57	--	nC
Qgd	Gate-Drain Charge		--	0.3	--	nC
td(on)	Turn-on Delay Time	VDD=30V, ID=0.34A, VGS=10V, RG=3Ω	--	4	--	nS
tr	Turn-on Rise Time		--	19	--	nS
td(off)	Turn-Off Delay Time		--	12	--	nS
tf	Turn-off fall Time		--	24	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25°C, Is=0.3A	--	--	1.2	V

Typical Operating Characteristics



SOT-563 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.500	0.600	0.020	0.024
A1	0.000	0.050	0.000	0.002
e	0.450	0.550	0.018	0.022
c	0.090	0.180	0.004	0.007
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
L	0.100	0.300	0.004	0.012
L1	0.200	0.400	0.008	0.016
θ	10° REF.		10° REF.	