

General Description

The WST2006 is the highest performance trench N-ch MOSFET with extreme high cell density , which provide excellent R_{DS(on)} and gate charge for most of the small power switching and load switch applications.

The WST2006 meet the RoHS and Green Product requirement with full function reliability approved.

Features

- Advanced high cell density Trench technology
- Super Low Gate Charge
- Excellent C_{dv/dt} effect decline
- Green Device Available

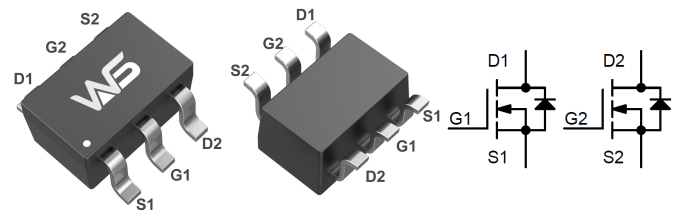
Product Summary

BVDSS	R _{DS(on)}	I _D
30V	5.5Ω	170mA

Applications

- High Frequency Point-of-Load Synchronous Small power switching for MB/NB/UMPC/VGA
- Networking DC-DC Power System
- Load Switch

SOT-363 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	30	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _A =25°C	Continuous Drain Current, V _{GS} @ 4.5V ¹	0.17	A
I _D @T _A =70°C	Continuous Drain Current, V _{GS} @ 4.5V ¹	0.1	A
I _{DM}	Pulsed Drain Current ²	0.8	A
P _D @T _A =25°C	Total Power Dissipation ³	0.2	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient ¹	---	625	°C/W
R _{θJC}	Thermal Resistance Junction-Case ¹	---	240	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	30	---	---	V
$\Delta BV_{DSS}/\Delta T_J$	BVDSS Temperature Coefficient	Reference to 25°C , $I_D=1\text{mA}$	---	0.02	---	V/ $^\circ\text{C}$
$R_{DS(ON)}$	Static Drain-Source On-Resistance ²	$V_{GS}=10V, I_D=1.5A$	---	5.5	7.5	Ω
		$V_{GS}=5V, I_D=1A$	---	---	13.5	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	1.0	1.5	2.0	V
$\Delta V_{GS(th)}$	$V_{GS(th)}$ Temperature Coefficient		---	-2.5	---	mV/ $^\circ\text{C}$
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=30V, V_{GS}=0V, T_J=25^\circ\text{C}$	---	---	1	μA
		$V_{DS}=30V, V_{GS}=0V, T_J=125^\circ\text{C}$	---	---	500	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 10	nA
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V, V_{GS}=10V,$ $R_G=150\Omega, I_D=0.2A$	---	2	4.0	ns
$T_{d(off)}$	Turn-Off Delay Time					
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1\text{MHz}$	---	22	50	pF
C_{oss}	Output Capacitance		---	11	25	
C_{rss}	Reverse Transfer Capacitance		---	2.0	5.0	

Note : Short duration test pulse used to minimize self-heating effect.

Typical Characteristics

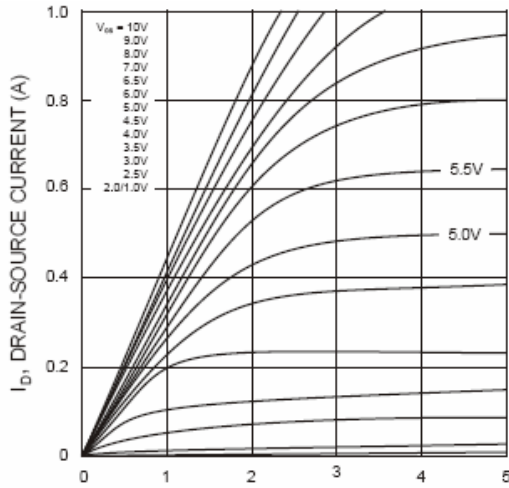


Fig. 1 On-Region Characteristics

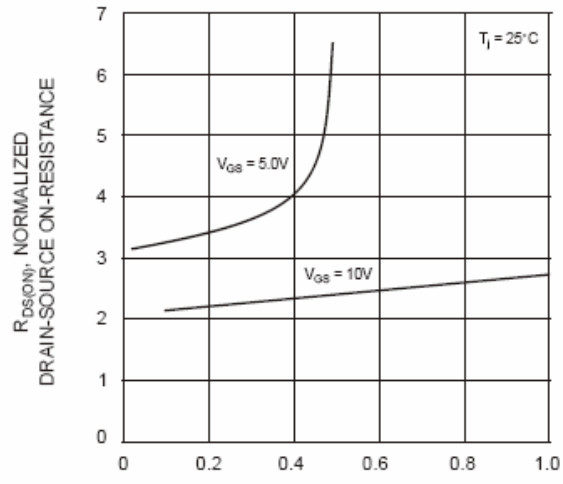


Fig. 2 On-Resistance vs Drain Current

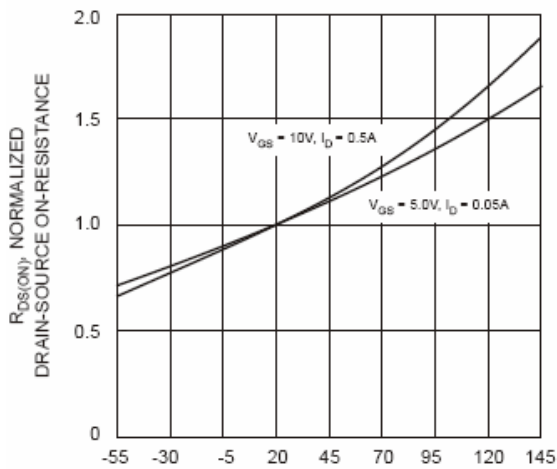


Fig. 3 On-Resistance vs Junction Temperature

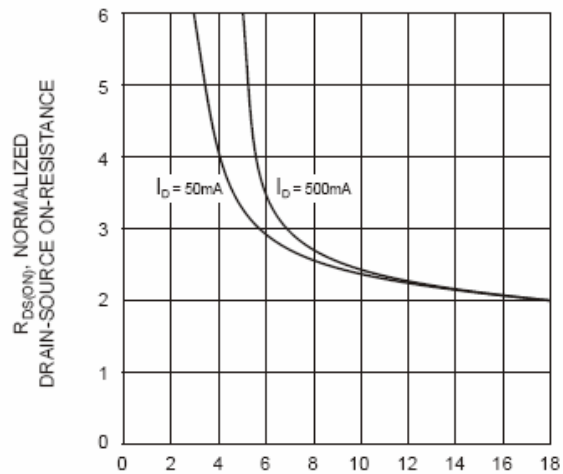
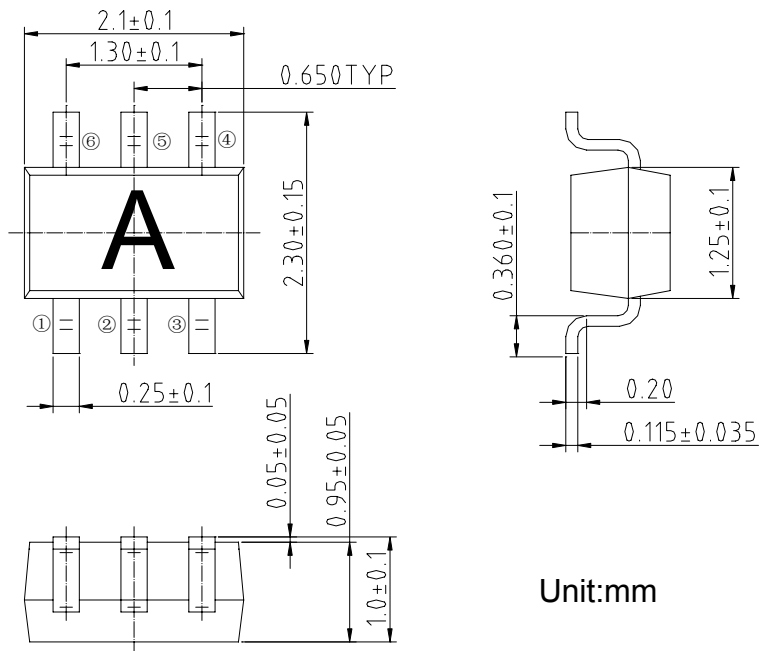


Fig. 4 On-Resistance vs. Gate-Source Voltage

Package Information: SOT-363





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