

## General Description

The WSF3036A is the highest performance trench N-ch MOSFETs with extreme high cell density, which provide excellent  $R_{DS(on)}$  and gate charge for most of the synchronous buck converter applications.

The WSF3036A meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

## Features

- Advanced high cell density Trench technology
- Super Low Gate Charge
- Excellent  $CdV/dt$  effect decline
- 100% EAS Guaranteed
- Green Device Available

## Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	30	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D@T_C=25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V^1$	32	A
$I_D@T_C=100^\circ C$	Continuous Drain Current, $V_{GS} @ 10V^1$	22	A
$I_{DM}$	Pulsed Drain Current <sup>2</sup>	50	A
EAS	Single Pulse Avalanche Energy <sup>3</sup>	60	mJ
$I_{AS}$	Avalanche Current	18	A
$P_D@T_C=25^\circ C$	Total Power Dissipation <sup>4</sup>	18	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
$R_{JA}$	Thermal Resistance Junction-Ambient ( $<10s$ ) <sup>1</sup>	---	25	$^\circ C/W$
$R_{JA}$	Thermal Resistance Junction-ambient (Steady State) <sup>1</sup>	---	62	$^\circ C/W$
$R_{JC}$	Thermal Resistance Junction-Case <sup>1</sup>	---	5	$^\circ C/W$

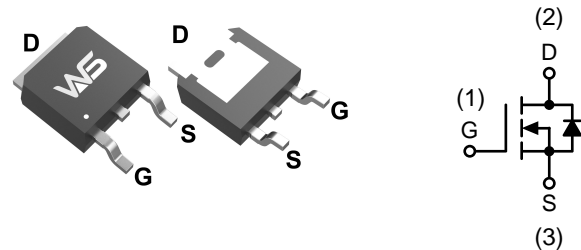
## Product Summary

BVDSS	$R_{DS(on)}$	$I_D$
30V	19m	32A

## Applications

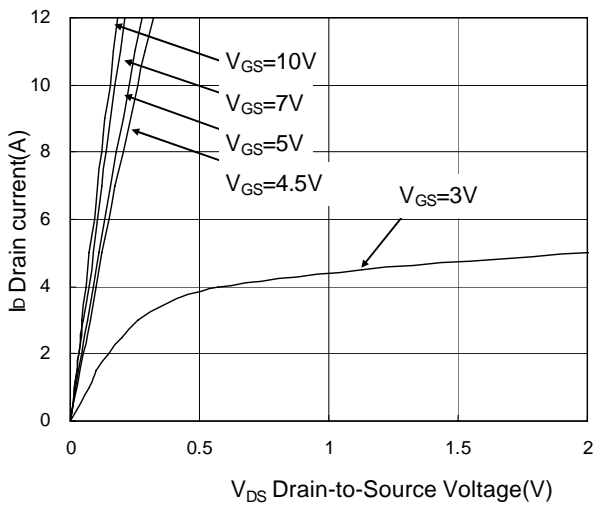
- High Frequency Point-of-Load Synchronous Buck Converter for MB/NB/UMPC/VGA
- Networking DC-DC Power System
- Load Switch

## TO-252-2L Pin Configuration

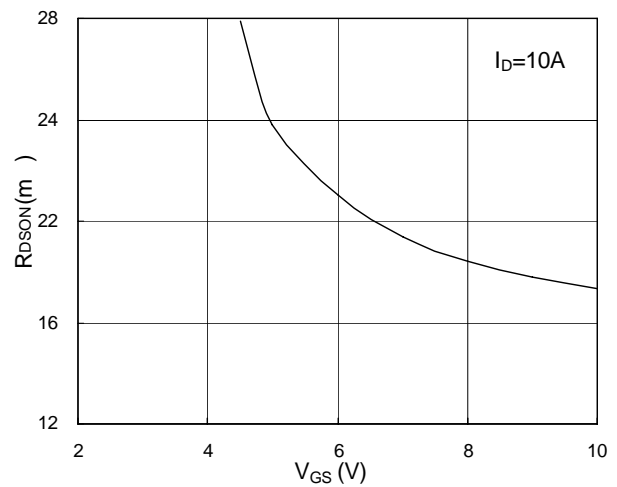




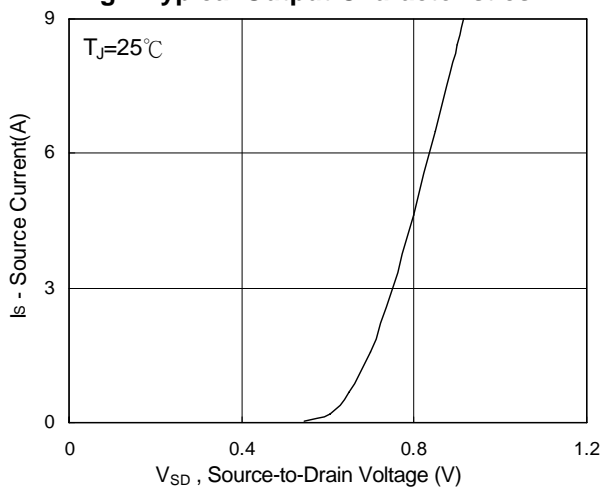
**Typical Characteristics**



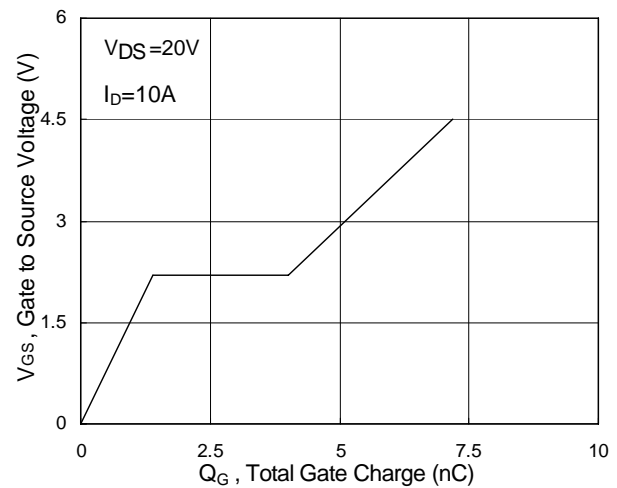
**Fig.1 Typical Output Characteristics**



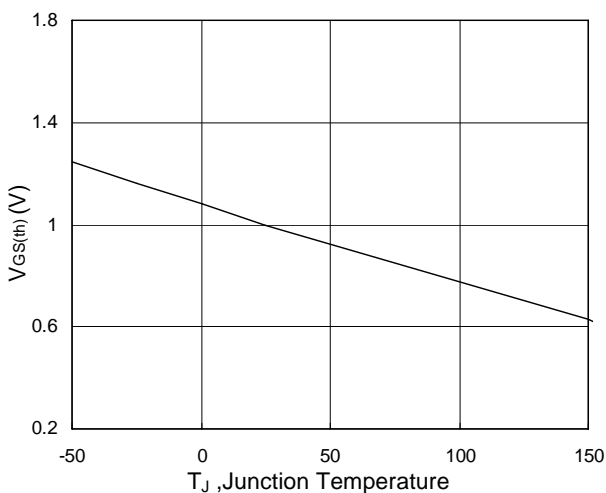
**Fig.2 On-Resistance vs. G-S Voltage**



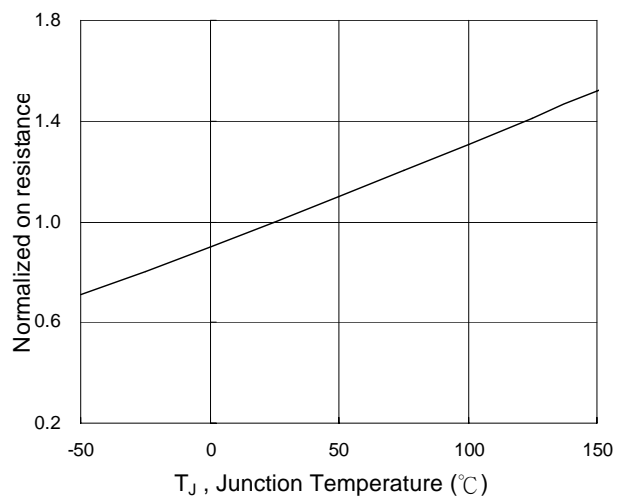
**Fig.3 Forward characteristics of reverse**



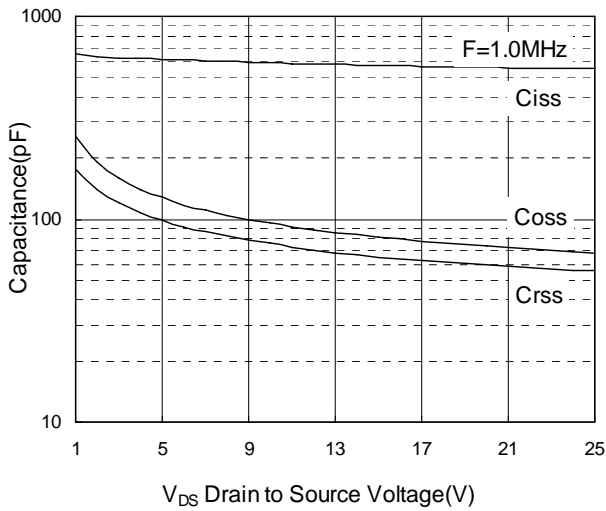
**Fig.4 Gate-charge characteristics**



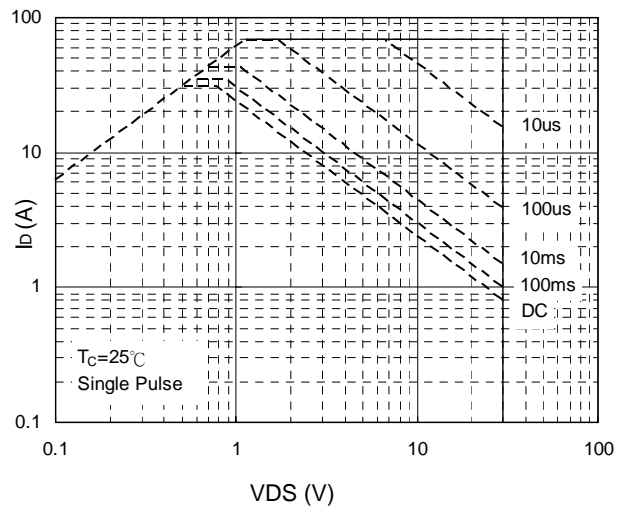
**(°C) Fig.5 V<sub>GS(th)</sub> vs. T<sub>J</sub>**



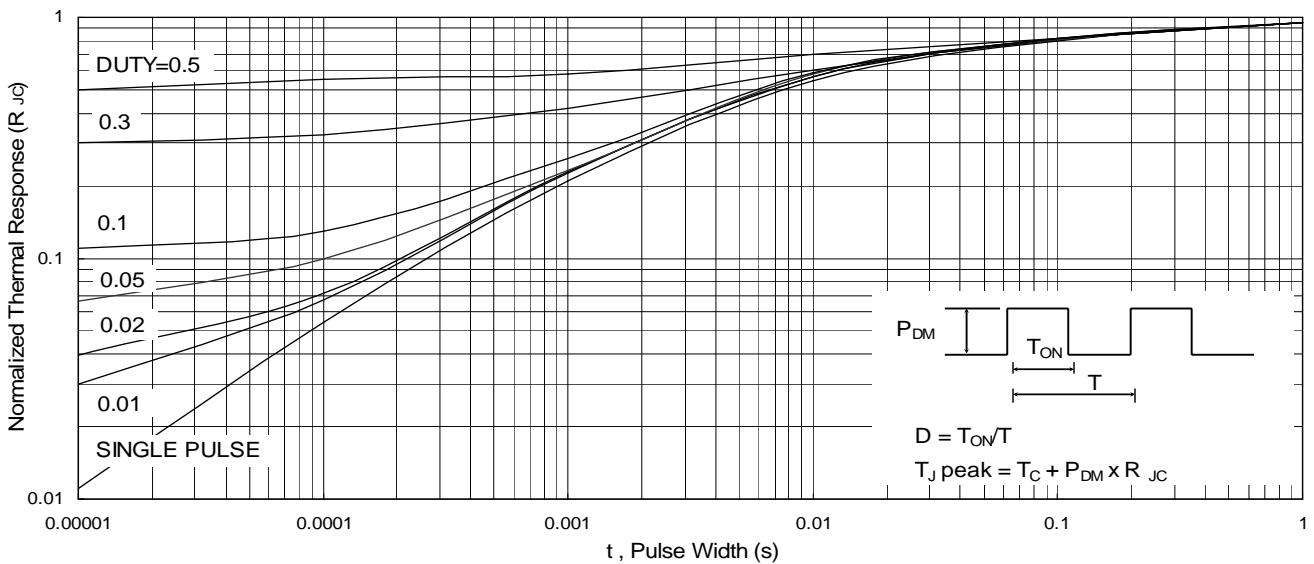
**Fig.6 Normalized R<sub>DS(on)</sub> vs. T<sub>J</sub>**



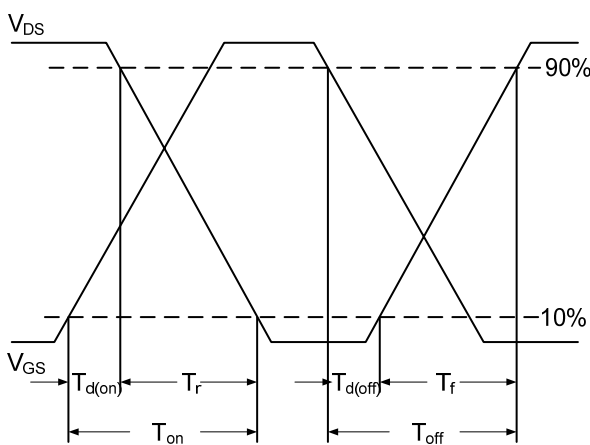
**Fig.7 Capacitance**



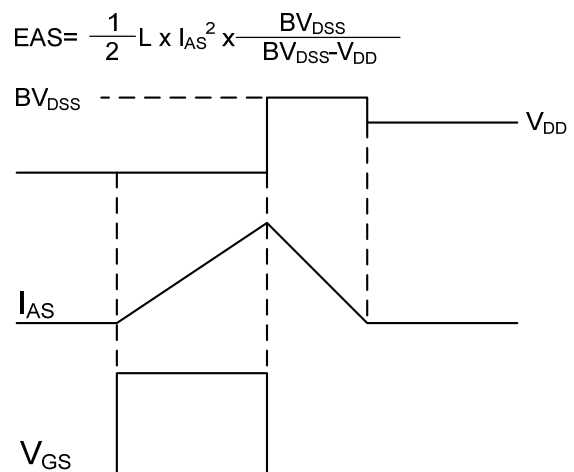
**Fig.8 Safe operating area**



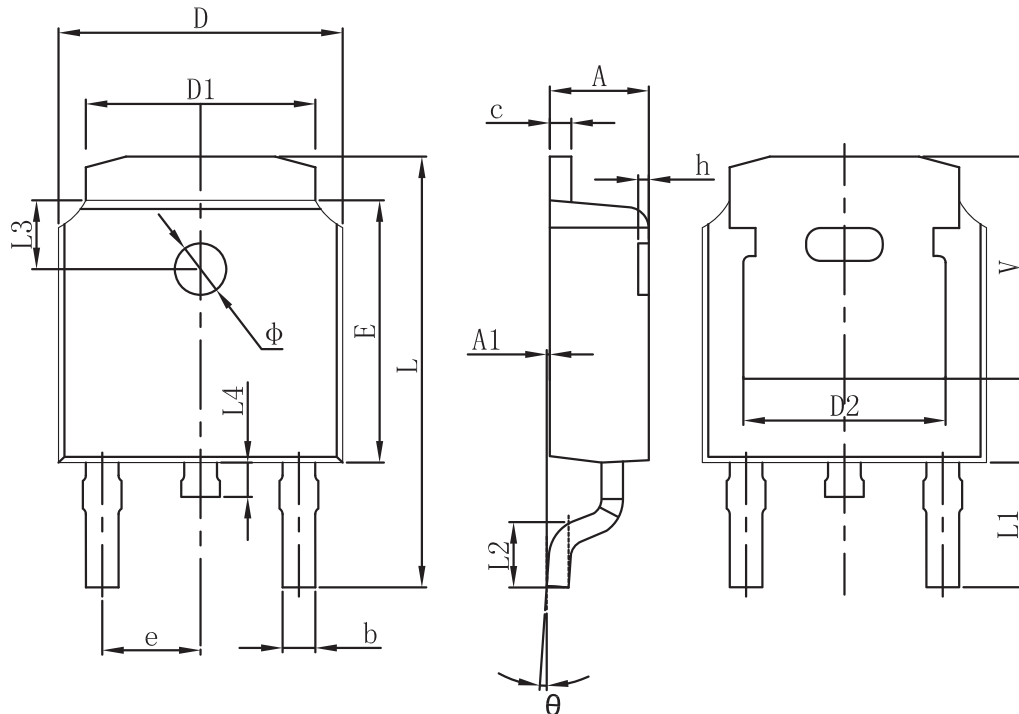
**Fig.9 Normalized Maximum Transient Thermal Impedance**



**Fig.10 Switching time waveform**



**Fig.11 Unclamped inductive switching wave.**

**Packaging information**


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
$\Phi$	1.100	1.300	0.043	0.051
$\theta$	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	



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