General Description

The WSK26N20 is obtained by the self-aligned planar Technology which reduce the conduction loss, improve switching performance and enhance the avalanche energy. The transistor can be used in various power switching circuit for system miniaturization and higher efficiency. converter applications .

The WSK26N20 meet the RoHS and Green Product requirement,100% EAS guaranteed with full function reliability approved.

Features

- Super Low Gate Charge
- Excellent CdV/dt effect decline
- 100% EAS Guaranteed
- Green Device Available

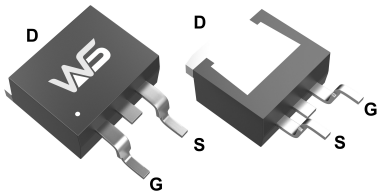
Product Summery

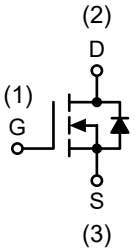
BV_{DSS}	R_{DSON}	I_D
200V	80mΩ	26A

Applications

- Uninterruptible Power Supply(UPS)
- Power Factor Correction (PFC)

TO-263-2L Pin Configuration





Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage(V_{GS} =0V)	200	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current, V_{GS} @ 10V	26	A
I_{DM}	Pulsed Drain Current·T_C=25°C	90	A
EAS	Avalanche Energy, Single pulse	340	mJ
IAR	Avalanche Current	20	A
EAR	Repetitive Avalanche Energy	8.3	mJ
P_D@T_C=25℃	Total Power Dissipation	104	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	---	60	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-Case	---	1.2	℃/W

Electrical Characteristics (T_J=25℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	200	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D =9A	---	80	100	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	2.0	3.0	4.0	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=200V , V_{GS}=0V , T_J=25℃	---	---	5	uA
		V_{DS}=160V , V_{GS}=0V , T_J=125℃	---	---	100	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V	---	---	±100	nA
Q_g	Total Gate Charge	V_{DD}=160V , V_{GS}=10V , I_D=18A	---	41	---	nC
Q_{gs}	Gate-Source Charge		---	5.5	---	
Q_{gd}	Gate-Drain Charge		---	19.5	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=100V, R_G=25Ω, I_D=18A	---	24	---	ns
T_r	Rise Time		---	45	---	
$T_{d(off)}$	Turn-Off Delay Time		---	101	---	
T_f	Fall Time		---	95	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	1318	---	pF
C_{oss}	Output Capacitance		---	180	---	
C_{rss}	Reverse Transfer Capacitance		---	75	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	T_C=25℃	---	---	18	A
I_{SM}	Pulsed Diode Forward Current		---	---	72	
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_{SD}=18A , T_J=25℃	---	---	1.4	V
t_{rr}	Reverse Recovery Time	V_{GS}=0V , I_S=18A ,diF/dt=100A /us	---	230	---	nS
Q_{rr}	Reverse Recovery Charge		---	1.8	---	uC

Note :
1、The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.
2、The EAS data shows Max. rating . IAS =20A, VDD = 50V, RG = 25 Ω, Starting TJ = 25 C
3、The test condition is Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 1%
4、The power dissipation is limited by 150℃ junction temperature
5、The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation..

Typical Characteristics

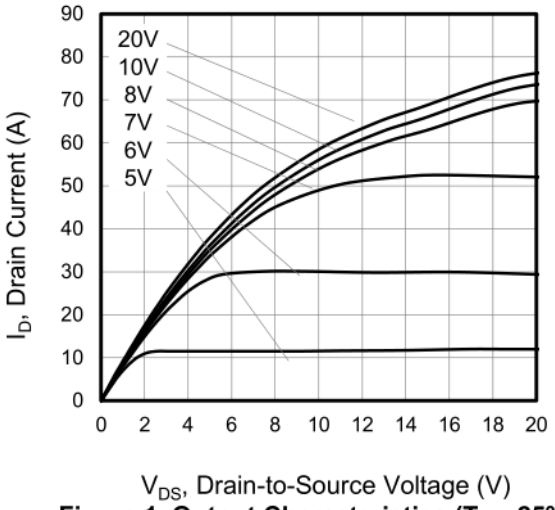


Figure 1. Output Characteristics (T_J = 25ºC)

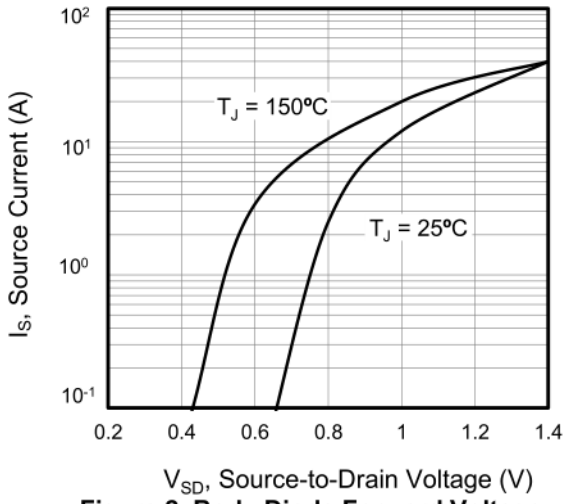


Figure 2. Body Diode Forward Voltage

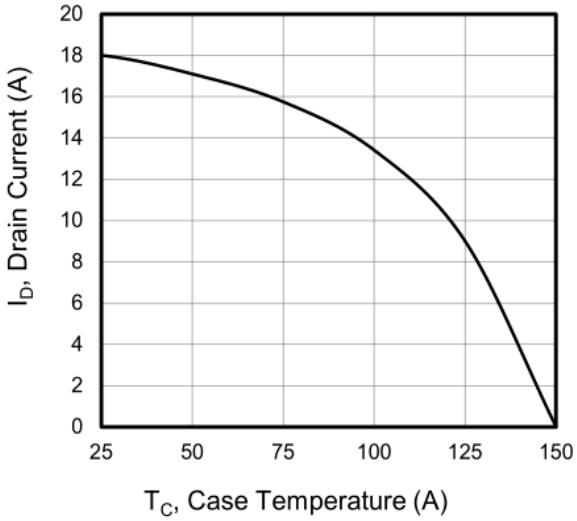


Figure 3. Drain Current vs. Temperature

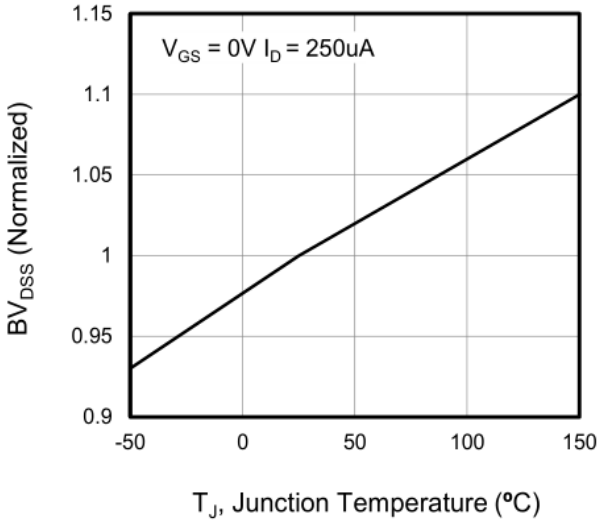


Figure 4. BV_{DSS} Variation vs. Temperature

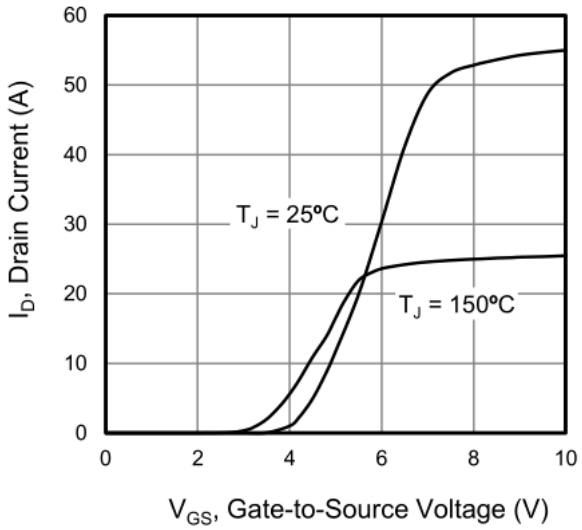


Figure 5. Transfer Characteristics

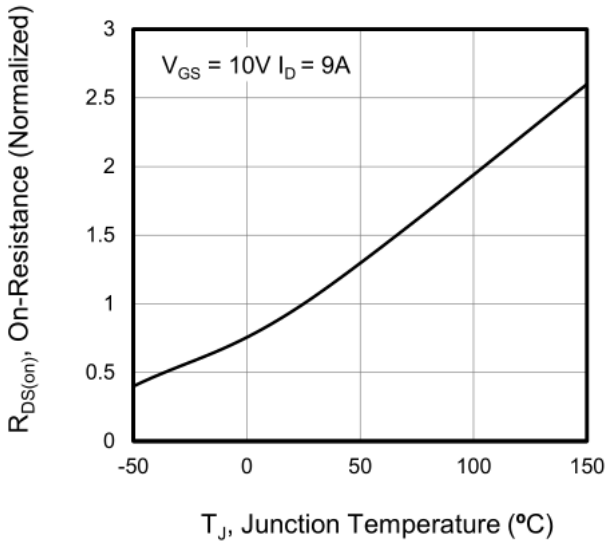


Figure 6. On-Resistance vs. Temperature

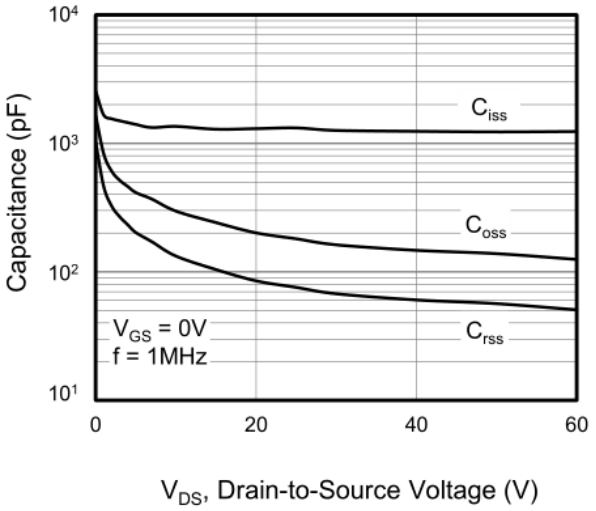


Figure 7. Capacitance

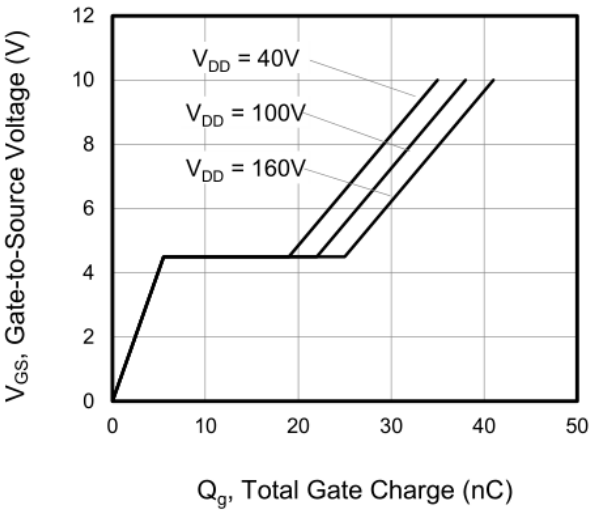


Figure 8. Gate Charge

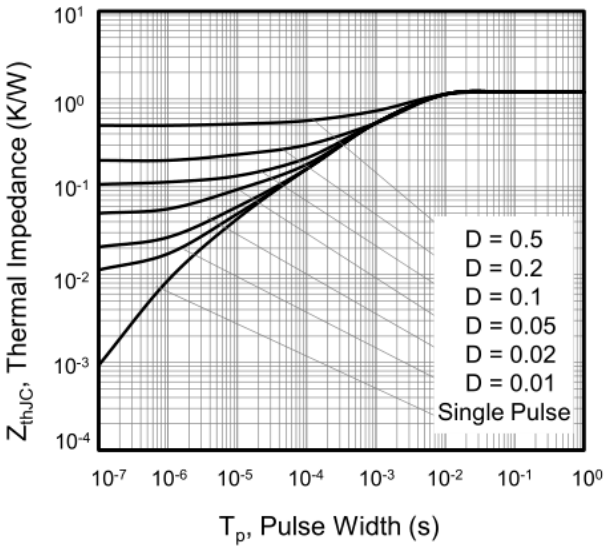
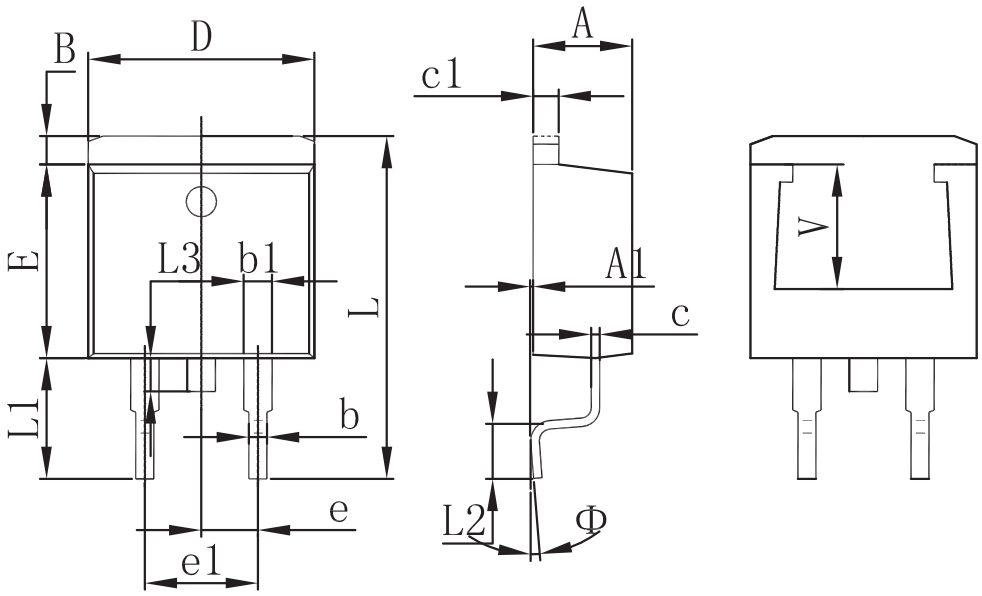


Figure 10. Transient Thermal Impedance

Packaging information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.120	1.420	0.044	0.056
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	14.940	15.500	0.588	0.610
L1	4.950	5.450	0.195	0.215
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
Φ	0°	8°	0°	8°
V	5.600 REF.		0.220REF.	

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