

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

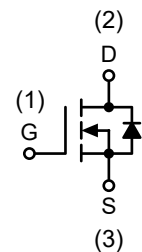
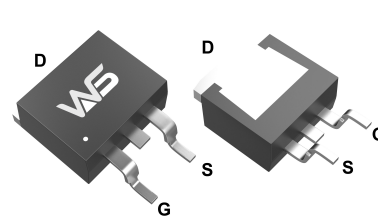
Product Summary

BV_{DSS}	$R_{DS(on)}$	I_D
200V	80m Ω	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
$I_D@T_C=25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	26	A
I_{DM}	Pulsed Drain Current $T_C=25^\circ C$	90	A
EAS	Avalanche Energy, Single pulse	340	mJ
IAR	Avalanche Current	20	A
EAR	Repetitive Avalanche Energy	8.3	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	104	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	---	60	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-Case	---	1.2	$^\circ C/W$

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	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°C	---	---	5	uA
		V _{DS} =160V , V _{GS} =0V , T _J =125°C	---	---	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°C	---	---	18	A
I _{SM}	Pulsed Diode Forward Current		---	---	72	
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _{SD} =18A , T _J =25°C	---	---	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 20Z copper.
2. The EAS data shows Max. rating . I_{AS} =20A, V_{DD} = 50V, R_G = 25 Ω, Starting T_J = 25 °C
3. The test condition is Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 1%
4. The power dissipation is limited by 150 °C junction temperature
5. The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation..

Typical Characteristics

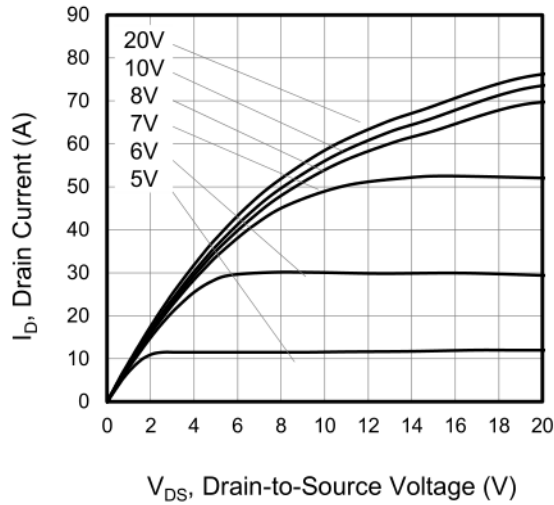


Figure 1. Output Characteristics ($T_J = 25^\circ\text{C}$)

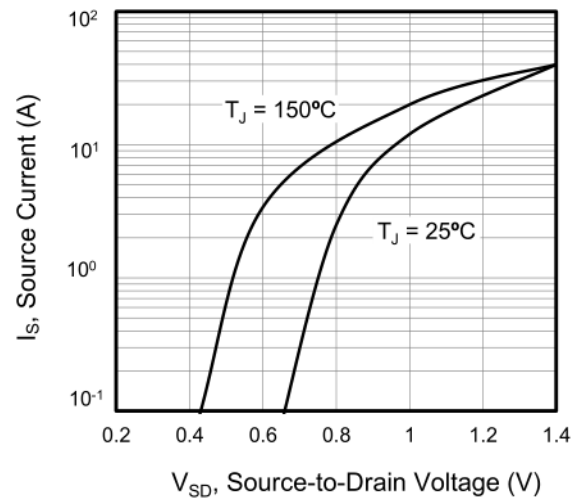


Figure 2. Body Diode Forward Voltage

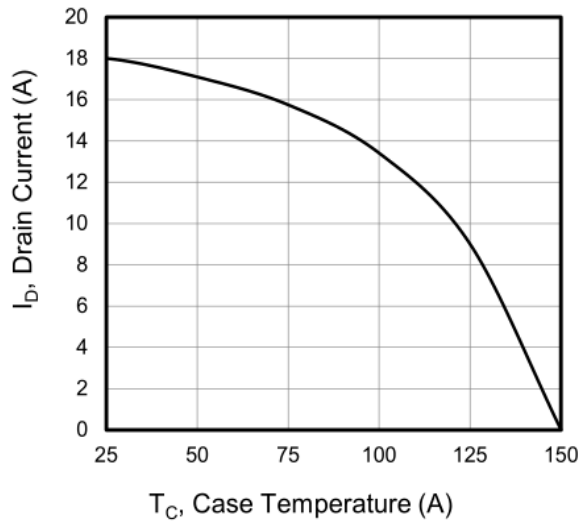


Figure 3. Drain Current vs. Temperature

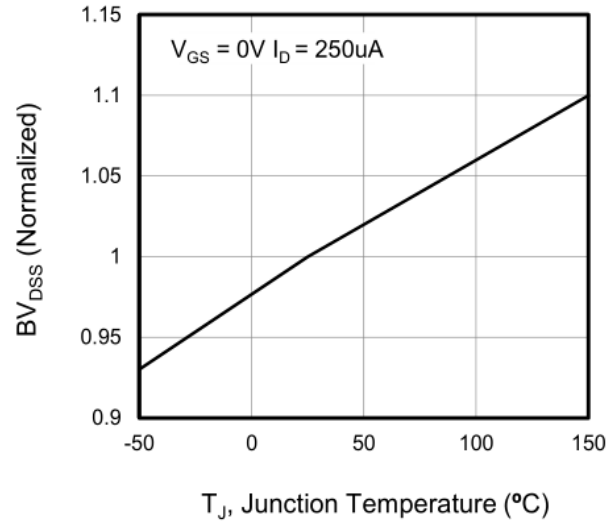


Figure 4. BV_{DSS} Variation vs. Temperature

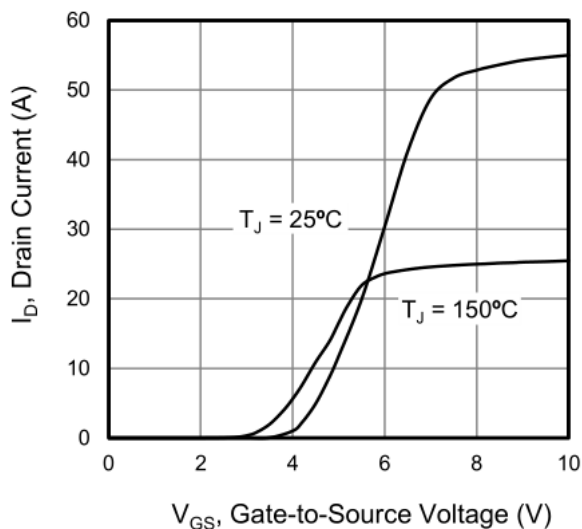


Figure 5. Transfer Characteristics

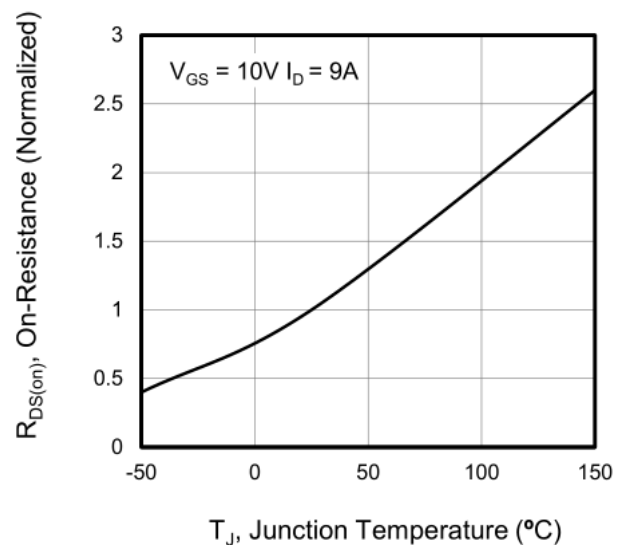
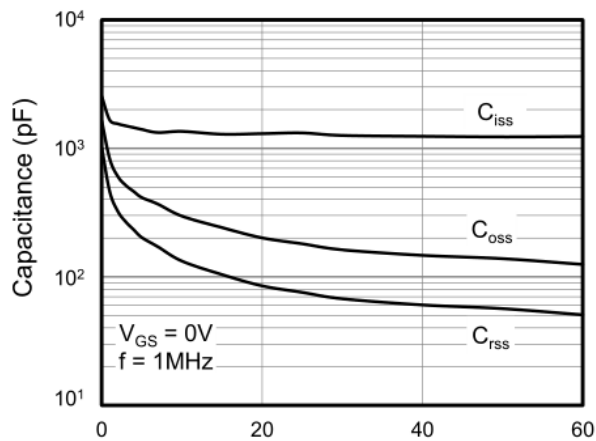
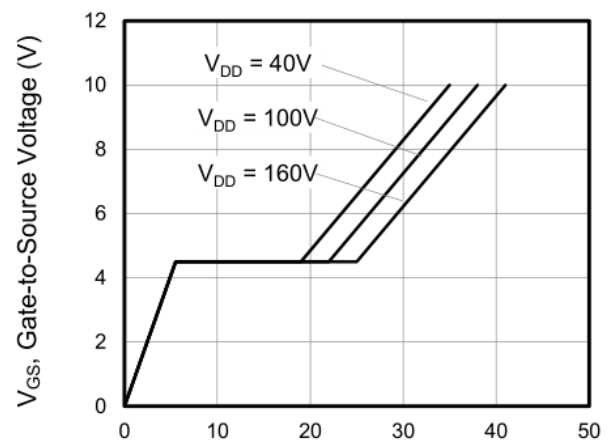


Figure 6. On-Resistance vs. Temperature



V_{DS} , Drain-to-Source Voltage (V)

Figure 7. Capacitance



Q_g , Total Gate Charge (nC)

Figure 8. Gate Charge

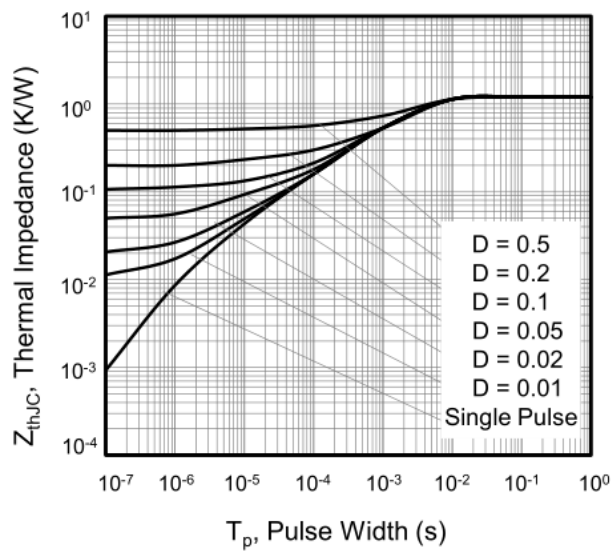
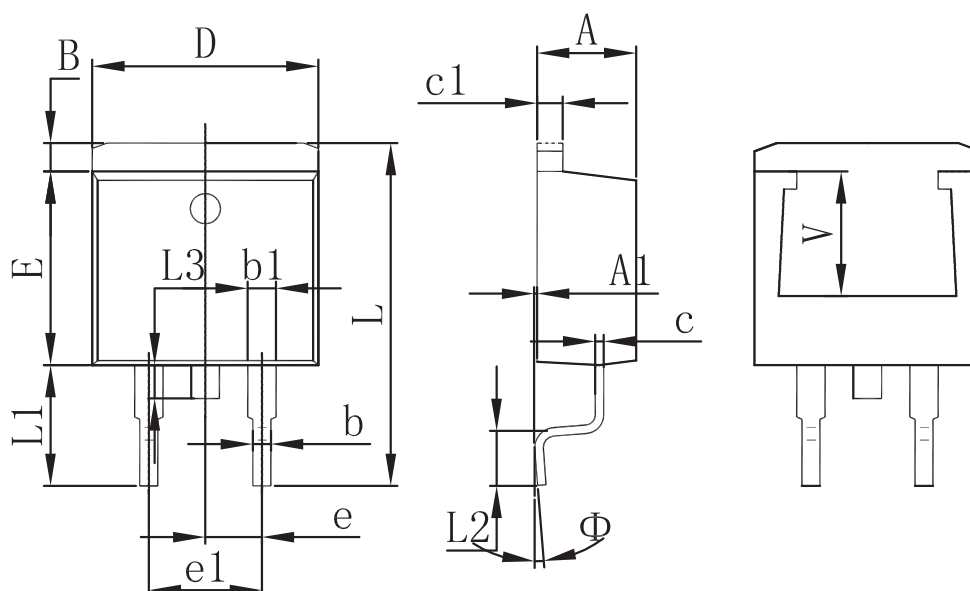


Figure 10. Transient Thermal Impedance

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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