

General Description

The 75N68 uses advanced technology and design to provide excellent $R_{DS(ON)}$.

This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

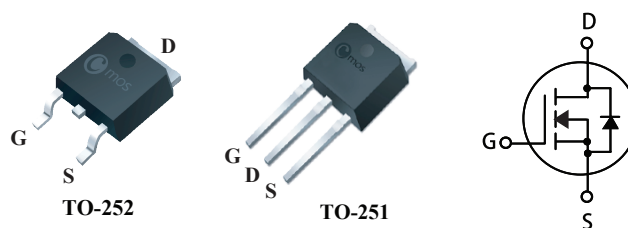
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
68V	9.5m Ω	70A

Applications

- Inverters
- Power Supplies

TO-252/251 Pin Configuration



Type	Package	Marking
CMD75N68	TO-252	CMD75N68
CMU75N68	TO-251	CMU75N68

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	68	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	70	A
$I_D@T_C=100^\circ\text{C}$		56	A
I_{DM}	Pulsed Drain Current	280	A
E_{AS}	Drain-Source Avalanche Energy ¹	310	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	90	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	60	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.4	$^\circ\text{C}/\text{W}$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	68	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance ²	$V_{GS}=10V$, $I_D=20A$	---	---	9.5	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=68V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance ²	$V_{DS}=10V$, $I_D=20A$	---	16	---	S
Q_g	Total Gate Charge	$I_D=30A$	---	67	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=54V$	---	18	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	27	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=34V$	---	21	---	ns
T_r	Rise Time	$I_D=30A$	---	59	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_{GEN}=4.7\Omega$	---	58	---	
T_f	Fall Time	$V_{GS}=10V$	---	26	---	
C_{iss}	Input Capacitance	$V_{DS}=34V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	3500	---	pF
C_{oss}	Output Capacitance		---	184	---	
C_{rss}	Reverse Transfer Capacitance		---	183	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	70	A
I_{SM}	Pulsed Source Current		---	---	280	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=20A$, $T_J=25^{\circ}\text{C}$	---	0.88	1.2	V
t_{rr}	Reverse Recovery Time	$di/dt = 100A/\mu s$	---	34	---	ns
Q_{rr}	Reverse Recovery Charge	$V_{GS}=0V$, $I_S=30A$	---	45	---	nC

Notes:

1.Starting $T_J = 25^{\circ}\text{C}$, $L=0.5\text{mH}$, $I_{AS}=35A$, $V_{DD}=30V$, $V_{GS}=10V$.

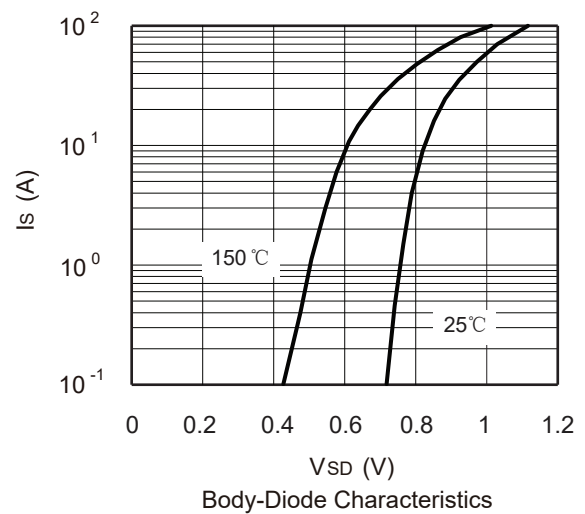
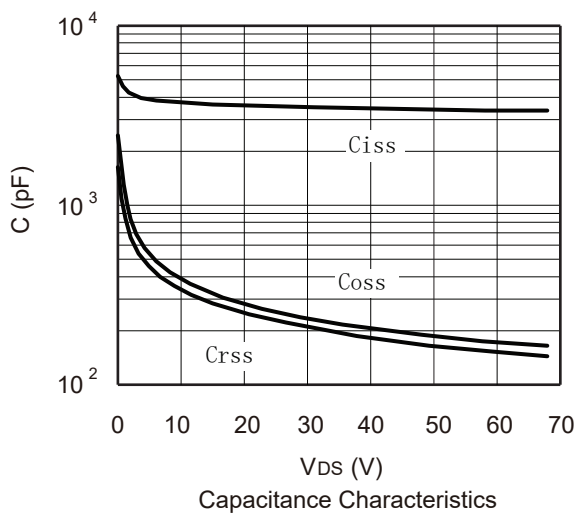
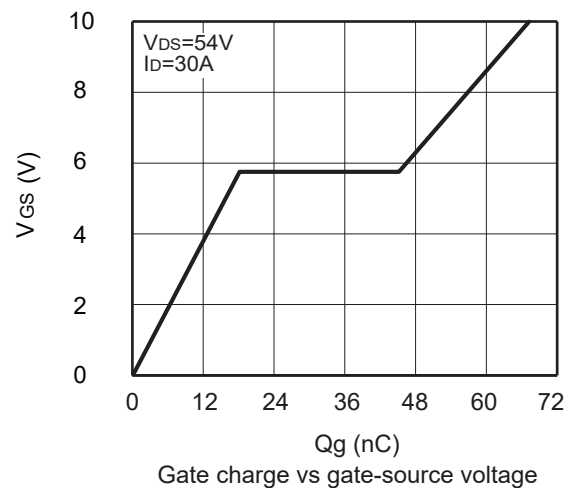
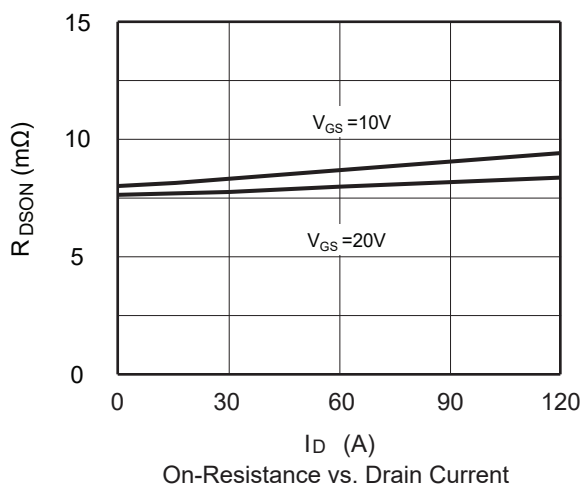
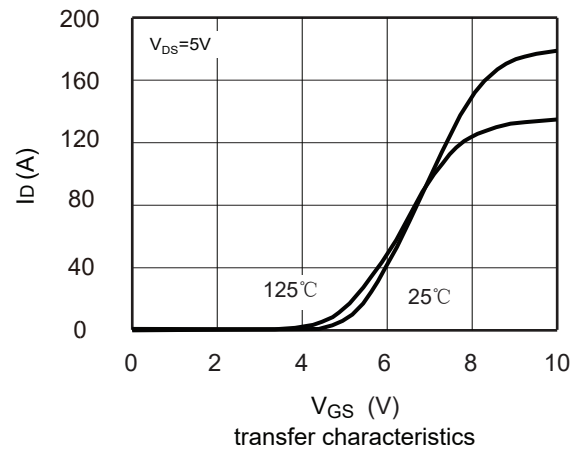
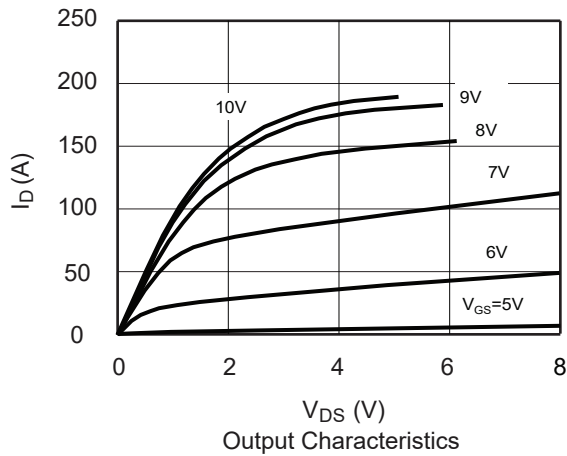
2.Pulse Test: Pulse Width < 300 μs , Duty cycle < 2.0%.

This product has been designed and qualified for the consumer market.

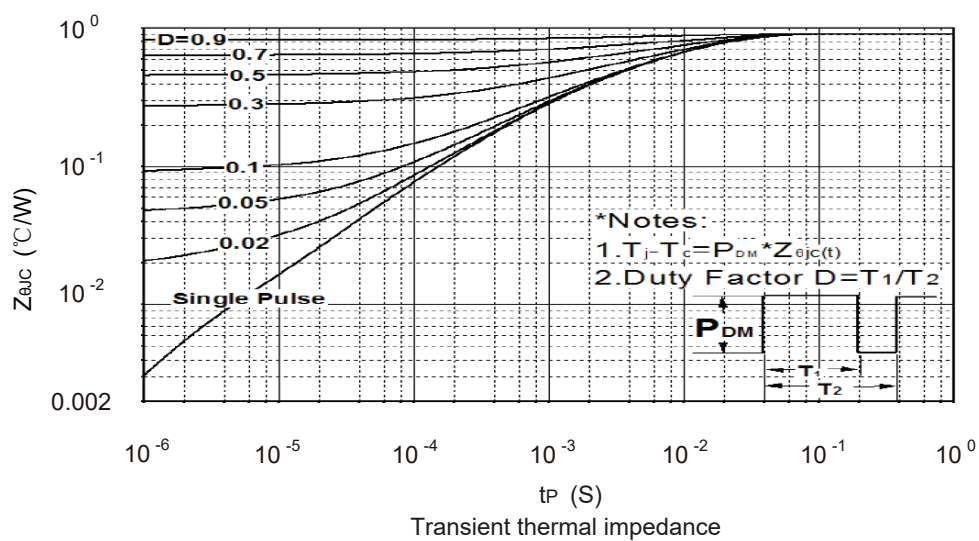
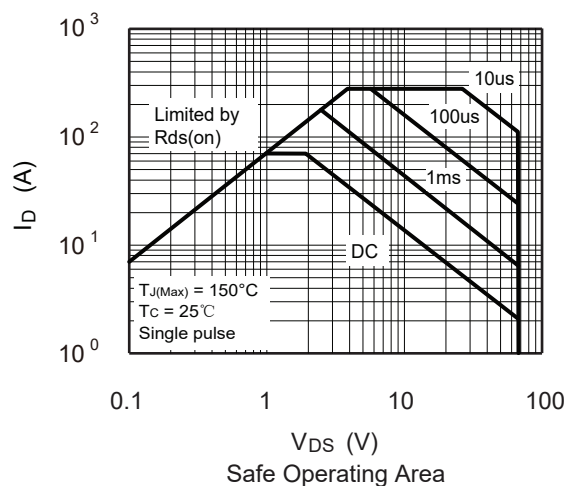
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Cmos reserves the right to improve product design ,functions and reliability without notice.Please refer to the latest version of specification.

Typical Characteristics



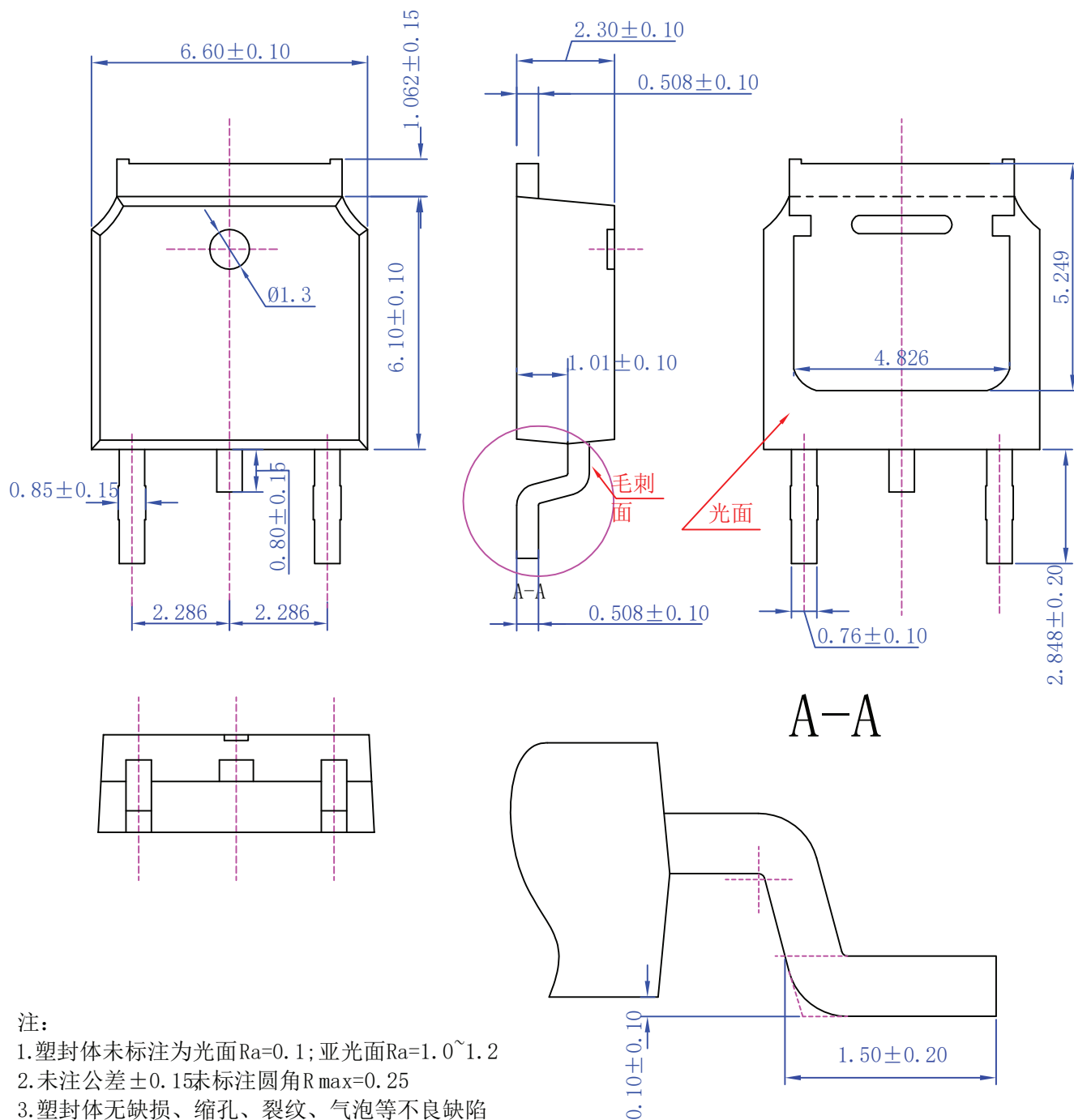
Typical Characteristics



Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

