

General Description

The 75N80 is N-Channel MOSFET, It has specifically been designed to minimize input capacitance and gate charge. The device is therefore suitable in advanced high-efficiency switching applications.

Features

- Minimize input capacitance and gate charge
- 100% avalanche rated
- Low On-Resistance

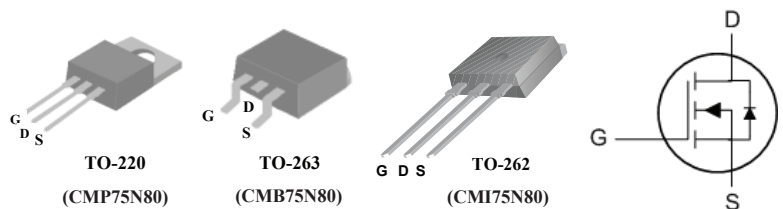
Product Summary

BVDSS	RDSON	ID
80V	11mΩ	75A

Applications

- Motor Control
- DC-DC converters
- Switching applications

TO220/263/262 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source Voltage	80	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	75	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	60	A
I_{DM}	Pulsed Drain Current ¹	230	A
EAS	Single Pulse Avalanche Energy ²	400	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	75	W
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	37	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	2	$^\circ\text{C/W}$

N-Channel Enhancement Mode Field Effect Transistor

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	80	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =40A	---	---	11	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2.0	---	4.0	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =Max Rating, V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V	---	---	±100	nA
g _{fs}	Forward Transconductance ³	V _{DS} =15V, I _D =40A	---	20	---	S
R _g	Gate Resistance	f=1MHz	---	2.3	---	Ω
Q _g	Total Gate Charge	I _D =75A	---	120	---	nC
Q _{gs}	Gate-Source Charge	V _{DD} =60V	---	54	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10V	---	38	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30V	---	80	---	ns
T _r	Rise Time	R _G =10Ω	---	37	---	
T _{d(off)}	Turn-Off Delay Time	V _{GS} =10V	---	140	---	
T _f	Fall Time	R _L =15Ω	---	27	---	
C _{iss}	Input Capacitance	V _{DS} =20V, V _{GS} =0V, f=1MHz	---	7400	---	pF
C _{oss}	Output Capacitance		---	450	---	
C _{rss}	Reverse Transfer Capacitance		---	140	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V _{SD}	Diode Forward Voltage ³	V _{GS} =0V, I _{SD} =25A	---	---	1.5	V

Note :

- 1.Pulse width limited by safe operating area
- 2.Starting T_J=25 °C, I_D=30 A, V_{DD}= 37.5V
- 3.Pulsed: pulse duration<=300μs, duty cycle <=2%