

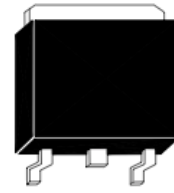
MSD80N03

N-Channel Enhancement Mode Power MOSFET

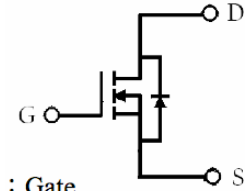
TO-252

FEATURES

- 100% UIS testing, @ $V_D=15V$, $L=0.1mH$, $V_G=10V$, $I_L=40V$, rated $V_{DS}=25V$ N-CH
- Simple Drive Requirement
- Repetitive Avalanche Rated
- Fast Switching Characteristic
- RoHS compliant package & Halogen-free package



G D S



G : Gate

D : Drain

S : Source

Absolute Maximum Ratings (Tc=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	25	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current @ TC=25°C	I _D	80	A
Continuous Drain Current @ TC=100°C	I _D	50	A
Pulsed Drain Current	I _{DM} *1	170	A
Avalanche Current	I _{AS}	53	A
Avalanche Energy @ L=0.1mH, I _D =37.5A, R _g =25Ω	E _{AS}	140	mJ
Repetitive Avalanche Energy @ L=0.05mH	E _{AR} *2	40	mJ
Power Dissipation (TC=25°C)	PD	83	W
Power Dissipation (TC=100°C)		45	W
Operating Junction and Storage Temperature	T _j , T _{stg}	-55~+175	°C

Note:

1. Pulse width limited by maximum junction temperature
2. Duty cycle ≤ 1%

Thermal characteristics (Tc=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Typical thermal resistance	R _{thjc}	1.8	°C/W
	R _{θJA}	75	

Characteristics (Tc=25°C, unless otherwise specified)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics					
BVDSS	VGS=0, ID=250μA	25	-	-	V
VGS	VDS = VGS, ID=250μA	1.0	1.5	3.0	V
GFS	VDS =5V, ID=24A	-	25	-	S
IGSS	VGS=±20	-	-	±100	nA
IDSS	VDS =20V, VGS =0V	-	-	1	uA
	VDS =20V, VGS =0V, Tj=125°C	-	-	25	
ID(ON)	VDS =10V, VGS =10V	80	-	-	A
*RDS(ON)	VGS =10V, ID=30A	-	5.3	6	mΩ
	VGS =5V, ID=24A	-	7.6	9.5	

Dynamic Characteristics

Rg	VGS=15mV, VDS=0V, f=1MHz	-	1.2	-	Ω
Qg(VGS=10V)	ID=30A, VDS=15V, VGS=10V	-	53	-	nC
Qg(VGS=5V)		-	30	-	
Qgs		-	8	-	
Qgd		-	17	-	
td(ON)	VDS=15V, ID=25A, VGS=10V, RGS=2.7Ω	-	22	-	ns
tr		-	16	-	
td(OFF)		-	65	-	
tf		-	10	-	
Ciss	VGS=0V, VDS=15V, f=1MHz	-	4840	-	pF
Coss		-	620	-	
Crss		-	435	-	

Source-Drain Diode Characteristics

IS		-	-	80	A
ISM		-	-	170	
VSD	IF=IS, VGS=0	-	-	1.3	V
trr	IF=IS, dIF/dt=100A/μs	-	32	-	nS
Qrr		-	12	-	nC

*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Ordering Information

Package	Shipping
TO-252	2500 pcs / Tape & Reel