

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_b
1000V	$10\Omega@10V$	2A

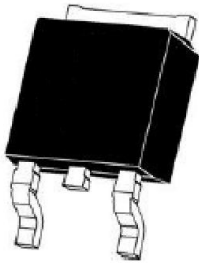
Feature

- Low gate charge minimize switching loss
- Fast recovery body diode

Application

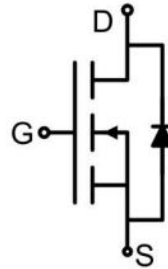
- DC/DC Converter
- Power Management

Package

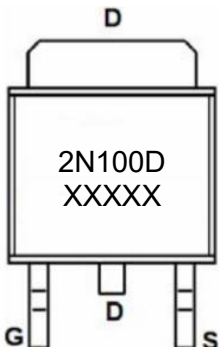


TO-252AB

Circuit diagram



Marking



Absolute maximum ratings (T_c=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	1000	V
Gate-Source Voltage	V _{GS}	±30	V
Continuous Drain Current	I _D	2	A
Pulsed Drain Current	I _{DM}	8	A
Power Dissipation	P _D	60	W
Thermal Resistance, Junction-to-Case	R _{θJC}	2.08	°C/W
Single pulse avalanche energy ¹⁾	E _{AS}	24	mJ
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Electrical characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 1mA	1000			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 1000V, V _{GS} = 0V			1	μA
		V _{DS} = 800V, V _{GS} = 0V, T _J = 125°C			250	
Gate-body leakage current	I _{GSS}	V _{GS} = ±30V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2.0		4.0	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 1A			10	Ω
Transconductance	g _{FS}	V _{DS} = 15V, I _D = 2A		2.5		S
Dynamic characteristics²⁾						
Input Capacitance	C _{iss}	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz		380		pF
Output Capacitance	C _{oss}			40		
Reverse Transfer Capacitance	C _{rss}			4		
Total Gate Charge	Q _g	V _{DS} = 500V, V _{GS} = 10V, I _D = 2A		15		nC
Gate-Source Charge	Q _{gs}			2.1		
Gate-Drain Charge	Q _{gd}			6		
Turn-on delay time	t _{d(on)}	V _{DS} = 500V, V _{GS} = 10V, I _D = 2A, R _G = 12Ω		8		nS
Turn-on rise time	t _r			6		
Turn-off delay time	t _{d(off)}			36		
Turn-off fall time	t _f			15		
Source-Drain Diode characteristics						
Diode Forward voltage	V _{SD}	V _{GS} = 0V, I _{SD} = 2A			1.5	V
Diode Forward Current	I _S				2	A
Diode Maximum Pulsed Current	I _{SM}				8	A
Reverse Recovery Time	t _{rr}	V _{GS} = 0V, I _S = I _F , dI _{SD} /dt = 100A/μs		320		nS
Reverse Recovery Charge	Q _{rr}			1000		nC

Notes:

- 1) The E_{AS} test condition is V_{DS} = 50V, V_{GS} = 15V, L = 10mH
- 2) Guaranteed by design, not subject to production.

Typical Characteristics

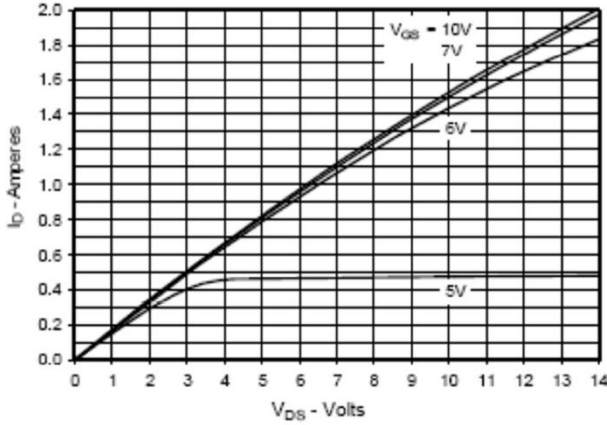


Fig 1 Typical Output Characteristics

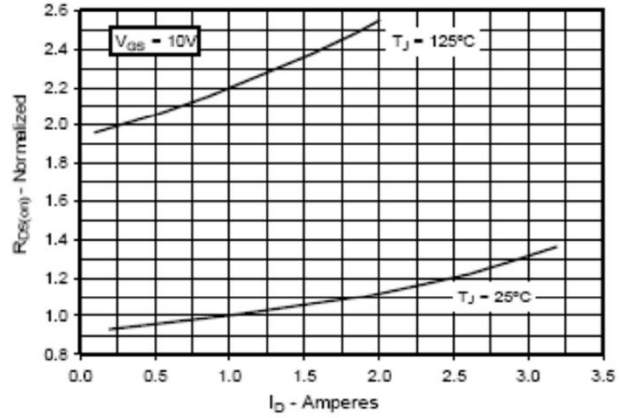


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

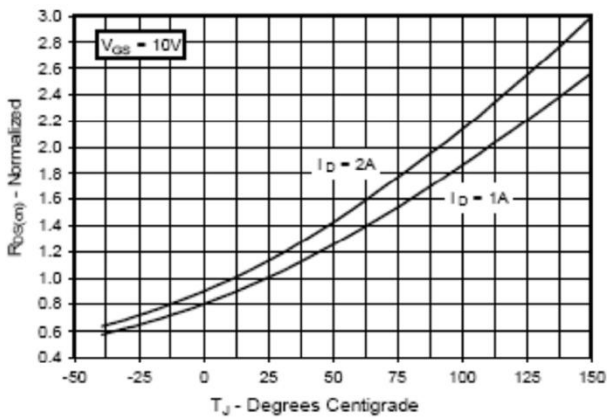


Fig 3 On-Resistance vs. Junction Temperature

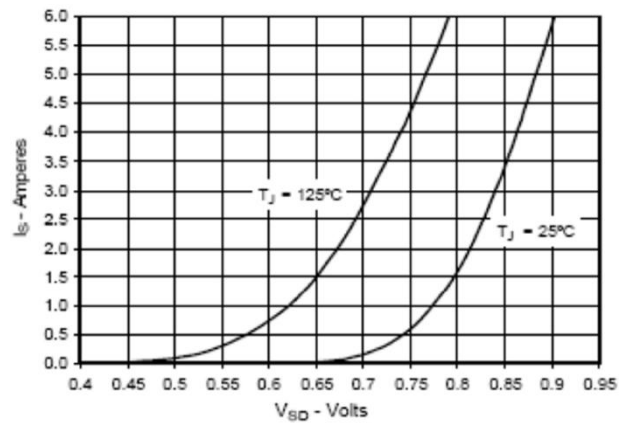


Fig 4 Body-Diode Characteristics

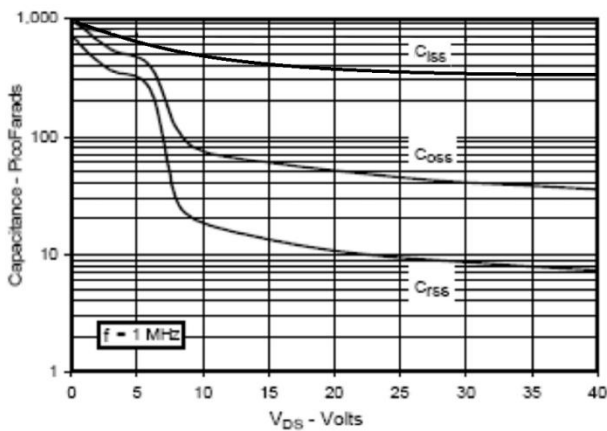


Fig 5 Capacitance Characteristics

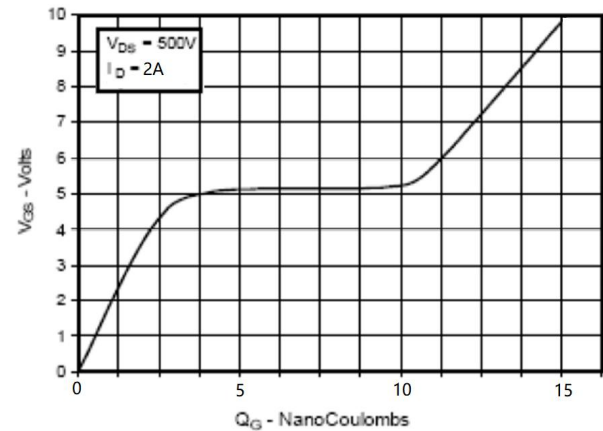


Fig 6 Gate-Charge Characteristics

Typical Characteristics

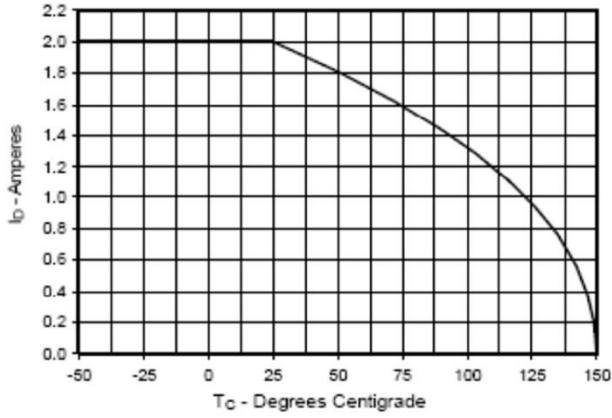


Figure 7 Maximum Continuous Drain Current vs. Case Temperature

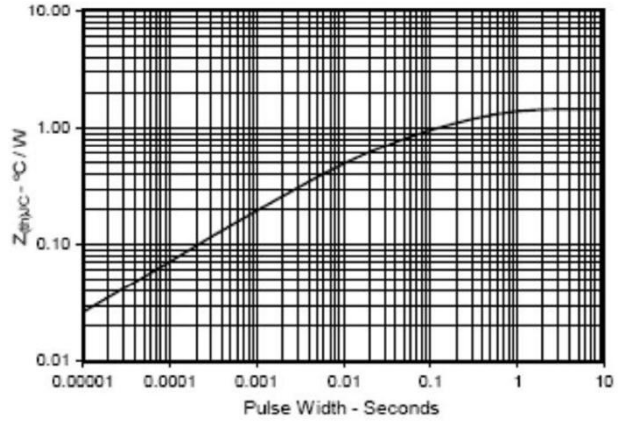
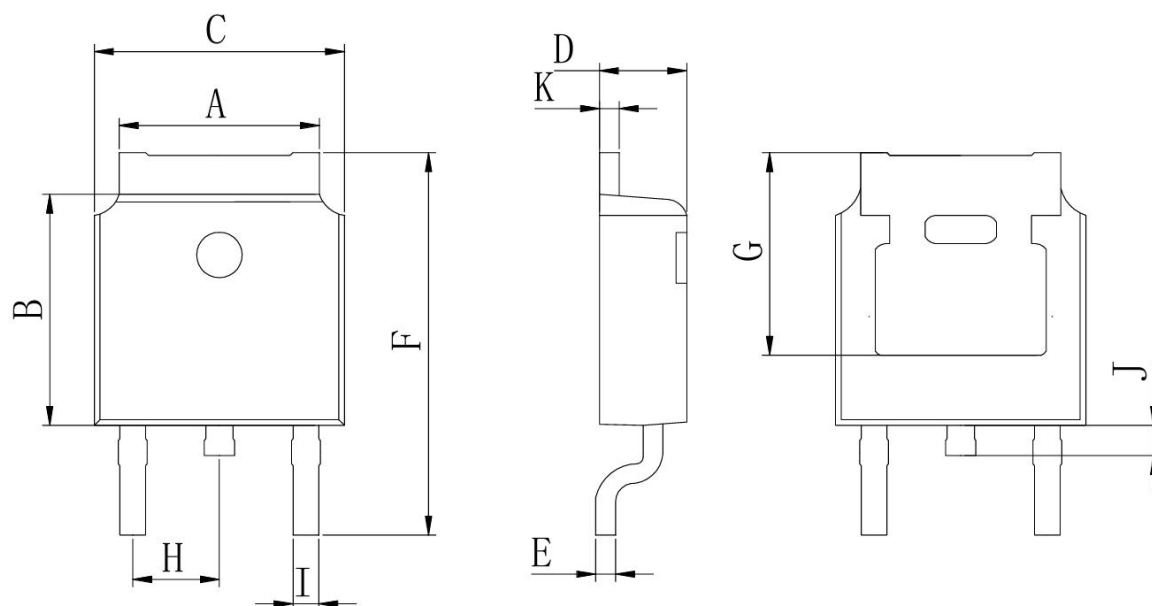


Figure 8 Maximum Effective Transient Thermal Impedance, Junction-to-Case

TO-252AB Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	5.050	5.650	0.199	0.222
B	5.800	6.400	0.228	0.252
C	6.250	6.850	0.246	0.270
D	2.200	2.400	0.087	0.094
E	0.400	0.600	0.016	0.024
F	9.710	10.310	0.382	0.406
G	5.050	5.650	0.199	0.222
H	2.100	2.500	0.083	0.098
I	0.700	0.900	0.028	0.035
J	0.500	0.700	0.020	0.028
K	0.400	0.600	0.016	0.024