

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
1200V	$7.5\Omega @ 10V$	2A

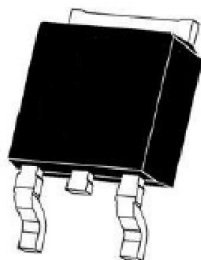
Feature

- High current rating
- Lower on-resistance and lower capacitance
- Lower total gate charge
- Tighter VSD specifications
- Avalanche energy specified
- Suffix “-Q1” for AEC-Q101

Application

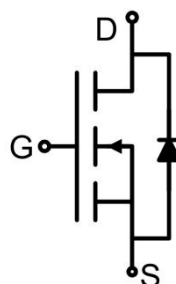
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

Package

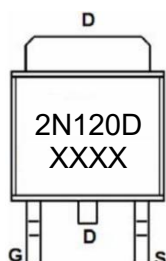


TO-252AB

Circuit diagram



Marking



Absolute maximum ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	1200	V
Gate-Source Voltage	V_{GS}	± 30	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current	I_{DM}	4	A
Single Pulse Avalanche Energy ¹⁾	E_{AS}	465	mJ
Power Dissipation	P_D	75	W
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}\text{C/W}$
Operating Junction Temperature	T_J	$-55 \sim +150$	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	$-55 \sim +150$	$^{\circ}\text{C}$

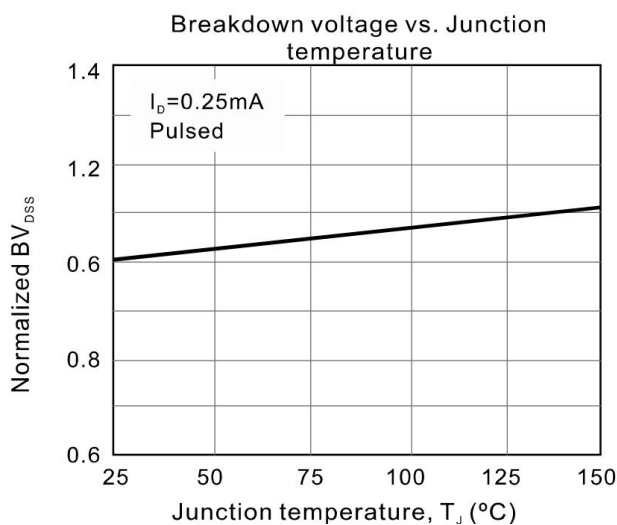
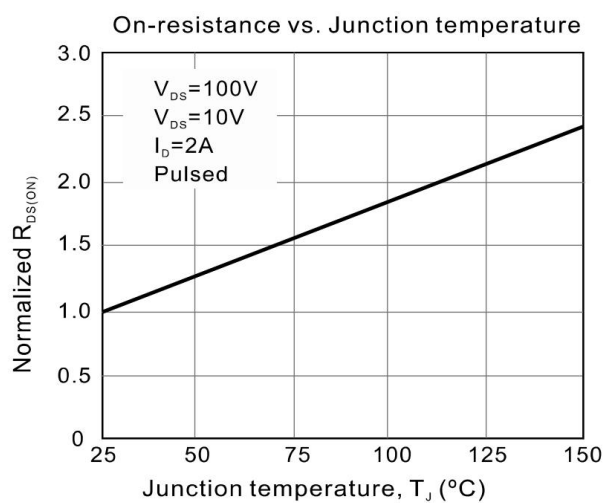
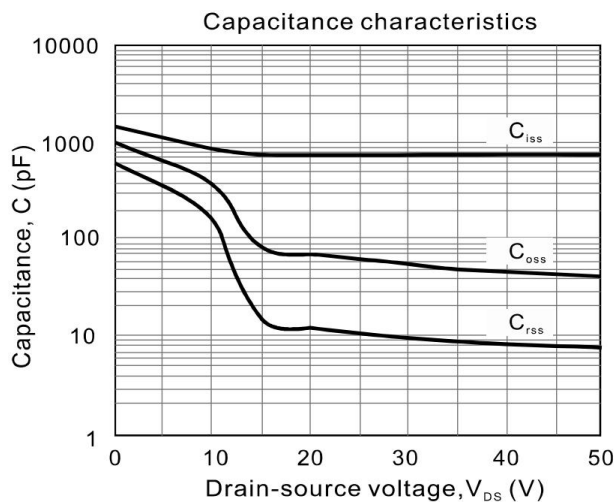
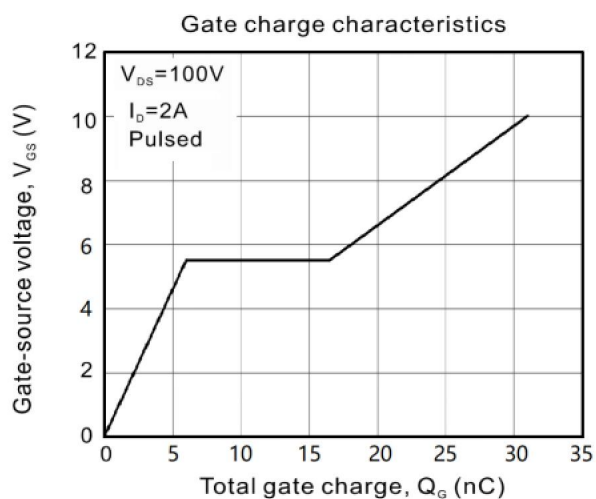
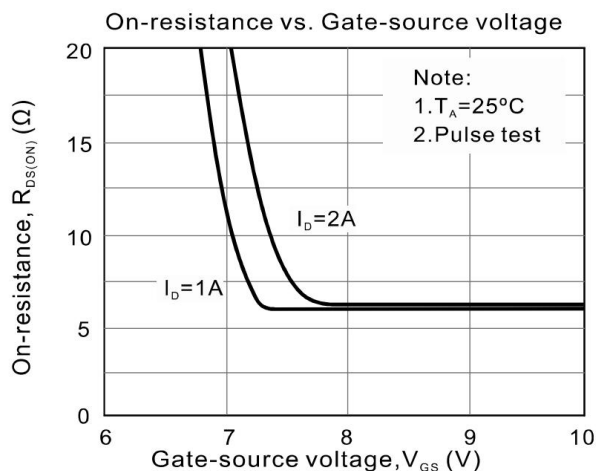
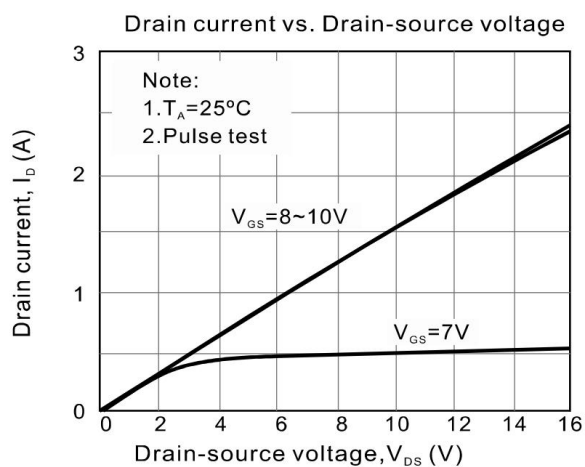
Electrical characteristics ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	1200			V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=1200V, V_{GS}=0V$			1	μA
Gate-body leakage current ²⁾	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 30V$			± 100	nA
Gate threshold voltage ²⁾	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	3	4	5	V
Drain-source on-resistance ²⁾	$R_{DS(on)}$	$V_{GS}=10V, I_D=1A$		6.75	7.5	Ω
Dynamic characteristics ³⁾						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		700		pF
Output Capacitance	C_{oss}			65		
Reverse Transfer Capacitance	C_{rss}			12		
Total Gate Charge	Q_g	$V_{DS}=100V, V_{GS}=10V, I_D=2A$		31		nC
Gate-Source Charge	Q_{gs}			9.5		
Gate-Drain Charge	Q_{gd}			10.1		
Turn-on delay time	$t_{d(on)}$	$V_{DS}=100V, V_{GS}=10V, I_D=2A$ $R_G=25\Omega$		13		nS
Turn-on rise time	t_r			20		
Turn-off delay time	$t_{d(off)}$			75		
Turn-off fall time	t_f			50		
Source-Drain Diode characteristics						
Diode Forward Current	I_S				2	A
Diode Forward voltage ²⁾	V_{SD}	$V_{GS}=0V, I_S=2A$			1.4	V

Notes:

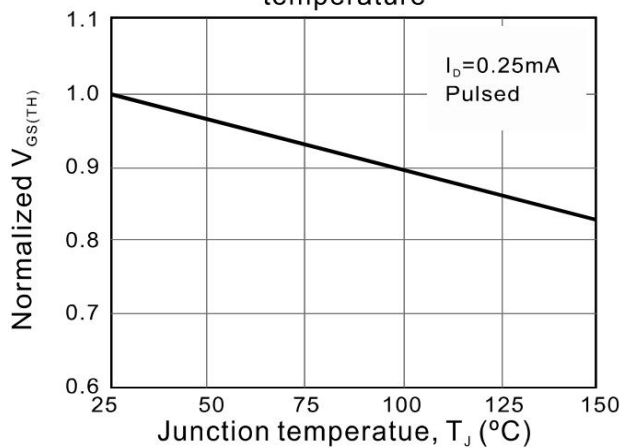
- 1) $L=30\text{mH}, I_L=4A, V_{DD}=100V, R_G=25\Omega$, starting $T_J=25^{\circ}\text{C}$.
- 2) Pulse test: pulse width $\leq 300\text{ s}$, duty cycle $\leq 2\%$.
- 3) Guaranteed by design, not subject to production testing.

Typical Characteristics

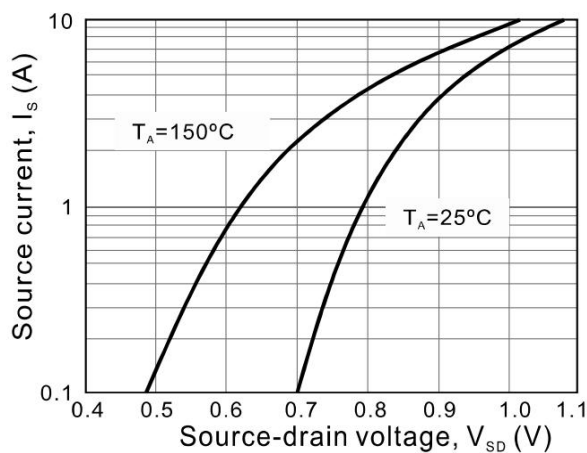


Typical Characteristics

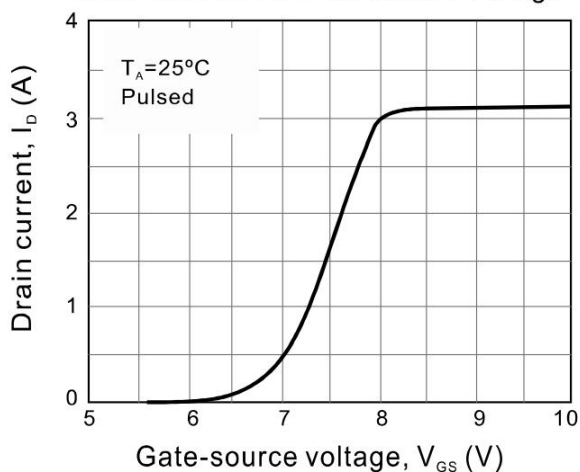
Gate threshold voltage vs. Junction temperature



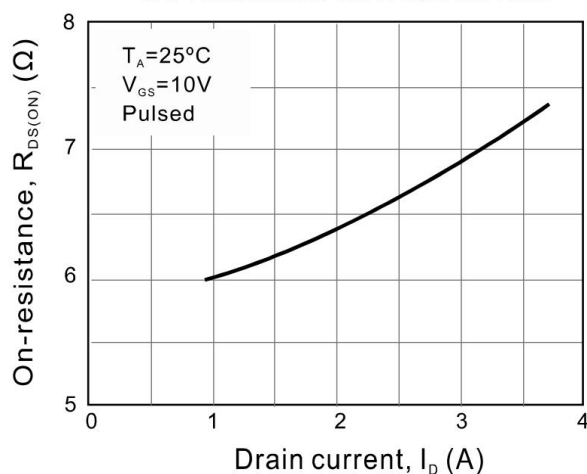
Source current vs. Source-drain voltage



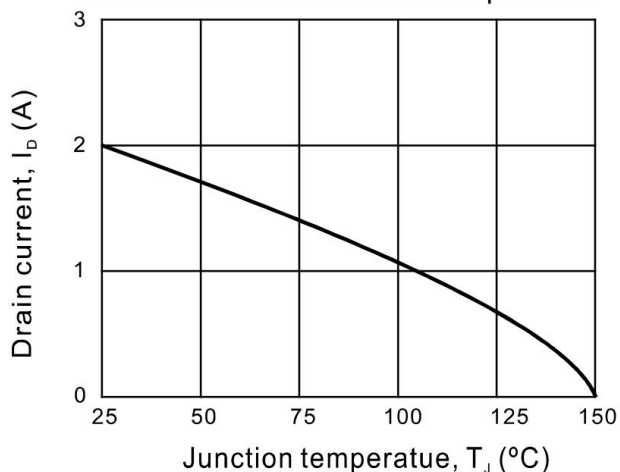
Drain current vs. Gate-source voltage



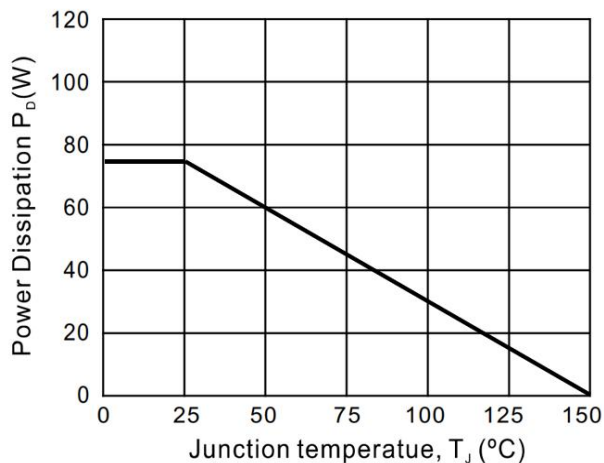
On-resistance vs. Drain current



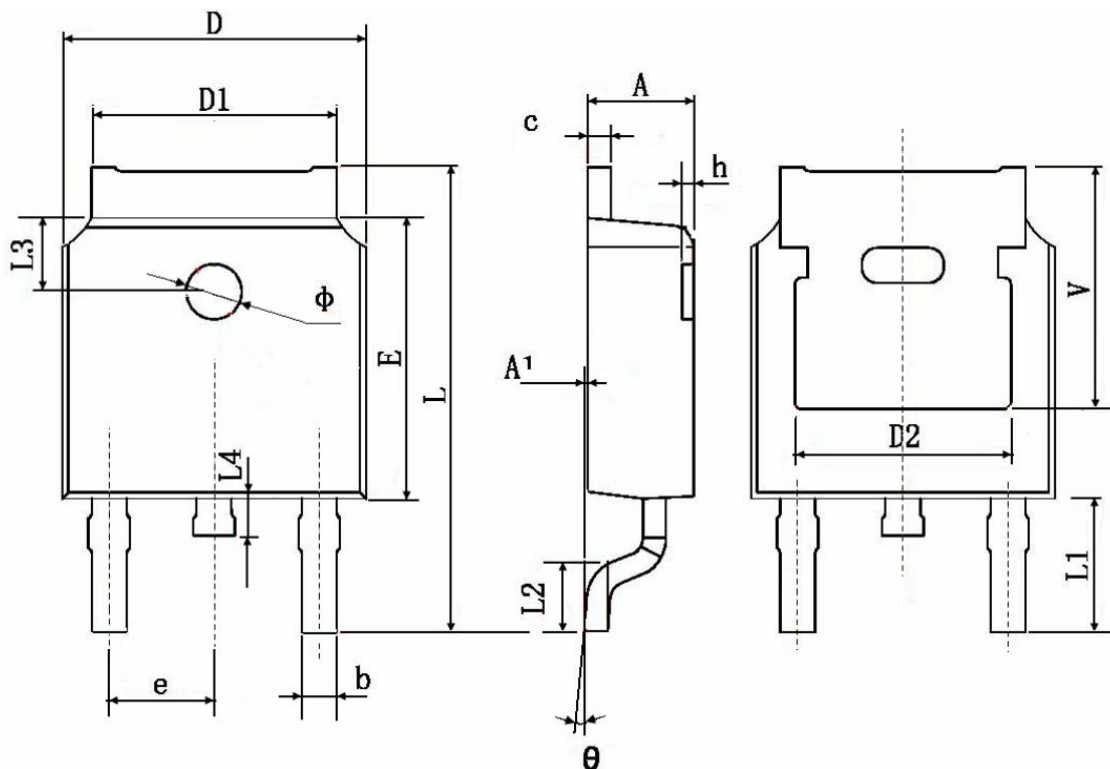
Drain current vs. Junction temperature



Power Dissipation vs. Junction temperature



TO-252AB Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.250	0.000	0.010
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.400	6.800	0.252	0.268
D1	5.100	5.500	0.201	0.217
D2	4.830 REF.		0.190 REF.	
E	5.900	6.300	0.232	0.248
e	2.186	2.390	0.086	0.094
L	9.700	10.500	0.382	0.413
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.800	0.055	0.070
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	