

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
900V	5.5Ω@10V	3A

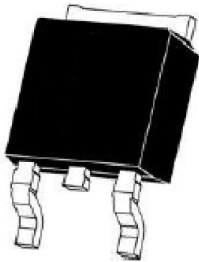
### Feature

- Ultra Low gate charge
- Low reverse transfer capacitance
- Fast switching capability
- Avalanche energy specified
- Improved dv/dt capability, high ruggedness

### Application

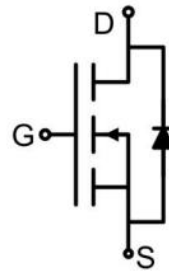
- Switching Applications
- PD Adaptor

### Package

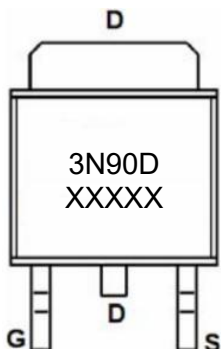


TO-252AB

### Circuit diagram



### Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	900	V
Gate-Source Voltage	$V_{GS}$	$\pm 30$	V
Continuous Drain Current( $T_C=25^\circ\text{C}$ )	$I_D$	3	A
Pulsed Drain Current	$I_{DM}$	12	A
Power Dissipation( $T_C=25^\circ\text{C}$ )	$P_D$	62.5	W
Thermal Resistance,Junction-to-Case	$R_{\theta JC}$	2	$^\circ\text{C}/\text{W}$
Single pulse avalanche energy <sup>1)</sup>	$E_{AS}$	24	mJ
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

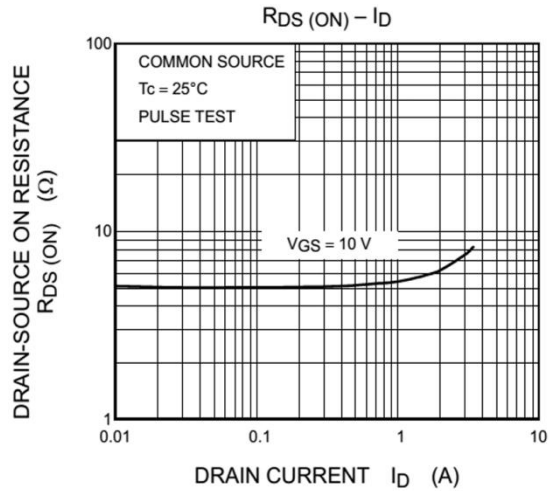
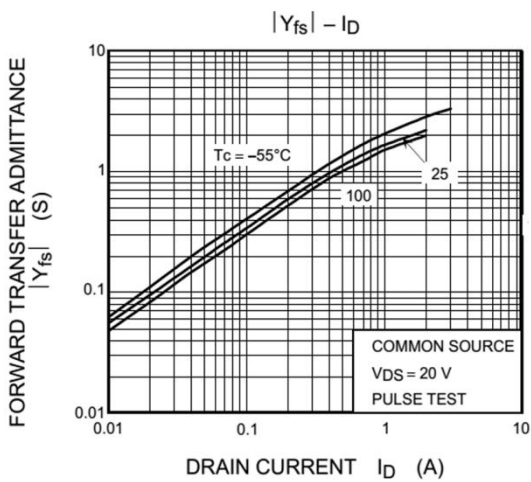
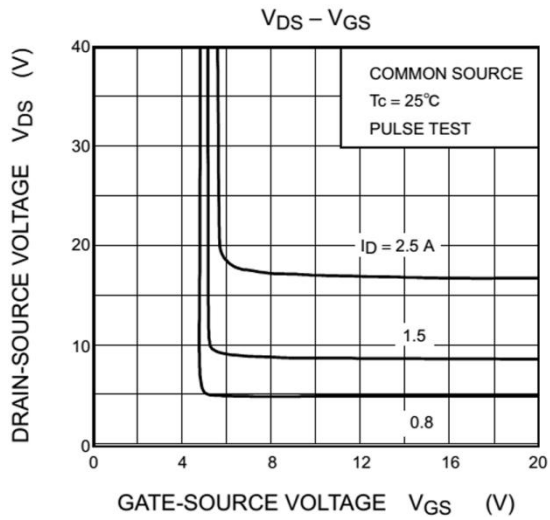
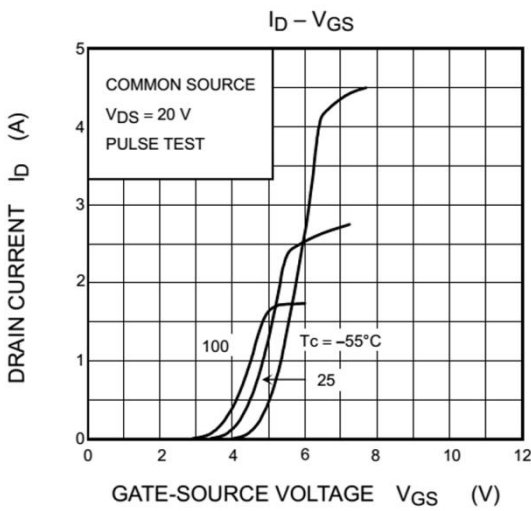
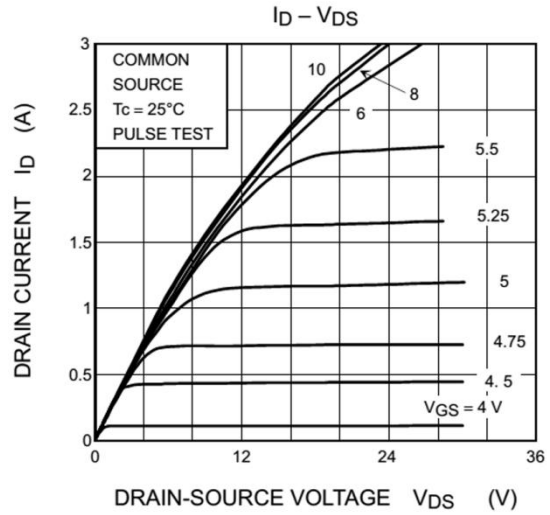
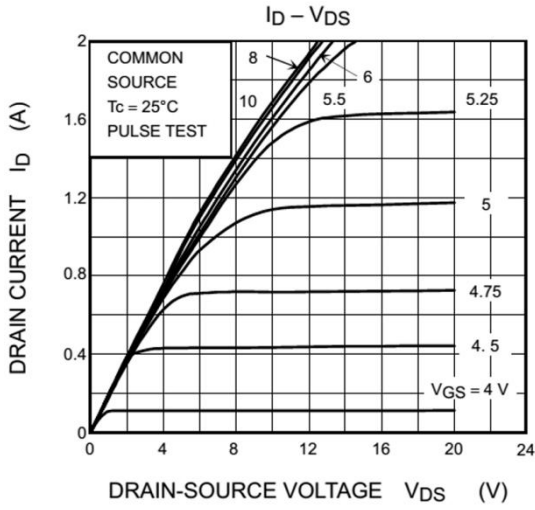
### Electrical characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu\text{A}$	900			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 900V, V_{GS} = 0V$			1	$\mu\text{A}$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 30V, V_{DS} = 0V$			$\pm 100$	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	2.0		4.0	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 1.5A$			5.5	$\Omega$
<b>Dynamic characteristics<sup>2)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 25V, V_{GS} = 0V, f = 1\text{MHz}$		480		pF
Output Capacitance	$C_{oss}$			43		
Reverse Transfer Capacitance	$C_{rss}$			7		
Total Gate Charge	$Q_g$	$V_{DD} = 450V, V_{GS} = 10V, I_D = 3A$		15		nC
Gate-Source Charge	$Q_{gs}$			2.5		
Gate-Drain Charge	$Q_{gd}$			6		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 450V, V_{GS} = 10V, I_D = 3A, R_G = 25\Omega$		11		nS
Turn-on rise time	$t_r$			14		
Turn-off delay time	$t_{d(off)}$			44		
Turn-off fall time	$t_f$			26		
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage	$V_{SD}$	$V_{GS} = 0V, I_{SD} = 3A$			1.5	V
Diode Forward Current	$I_S$				3	A
Diode Maximum Pulsed Current	$I_{SM}$				12	A
Reverse Recovery Time	$t_{rr}$	$V_{GS} = 0V, I_S = 3A, dI_F/dt = 100A/\mu\text{s}$		140		nS
Reverse Recovery Charge	$Q_{rr}$			530		nC

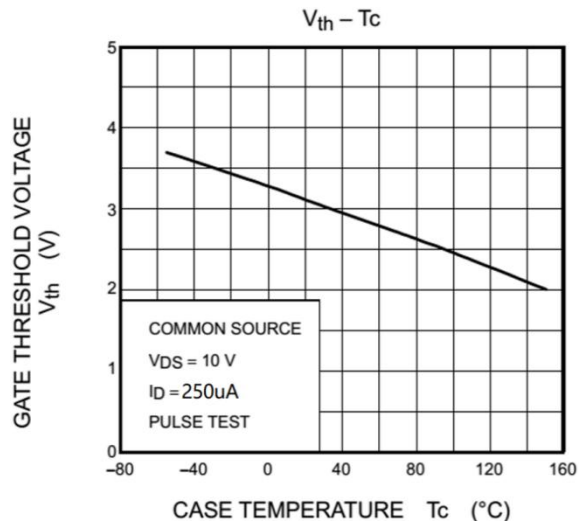
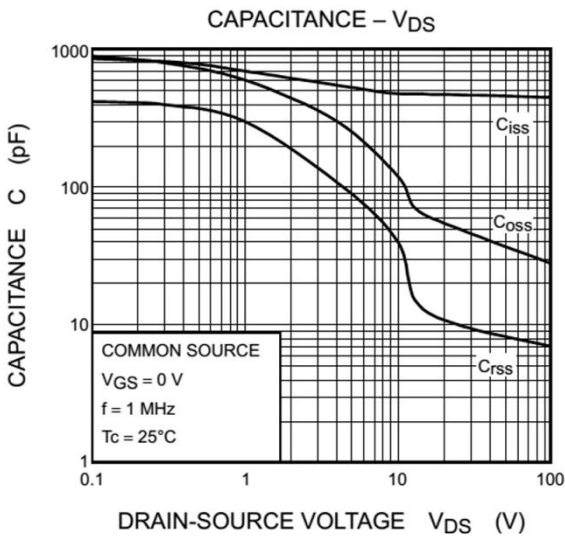
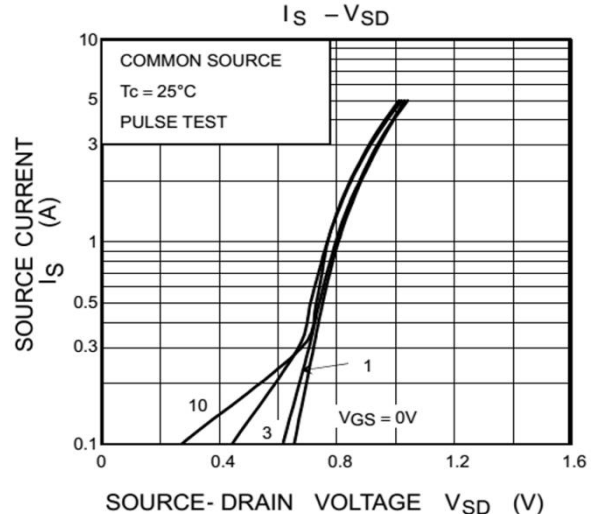
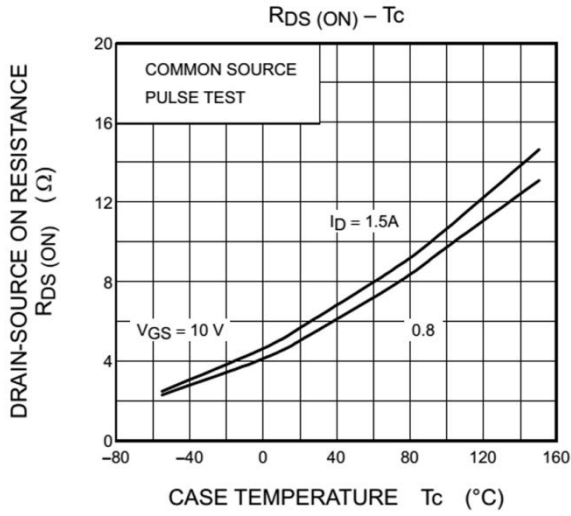
Notes:

- Limited by  $T_{jmax}$ , starting  $T_J = 25^\circ\text{C}$ ,  $L = 10\text{mH}$ ,  $V_{DS} = 50V$ ,  $V_{GS} = 15V$
- Guaranteed by design, not subject to production.

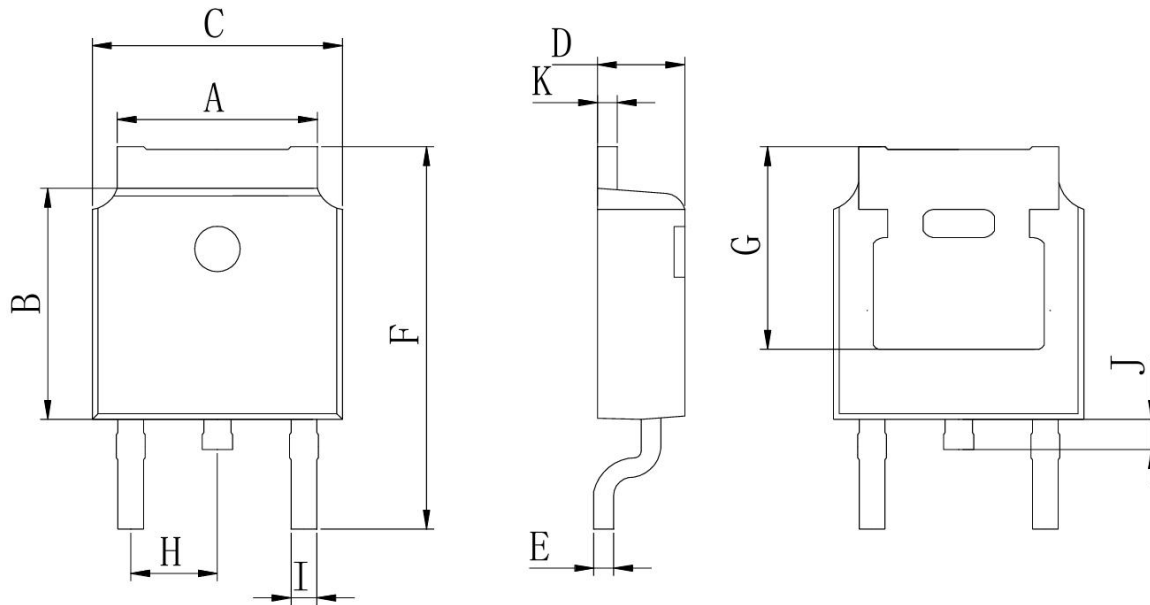
## Typical Characteristics



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### 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