

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
100V	50mΩ@10V	25A
	55mΩ@4.5V	

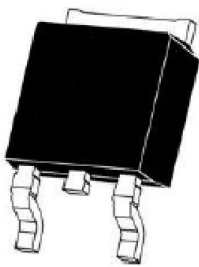
### Feature

- Low Gate Charge
- Advanced High Cell Density Trench Technology

### Application

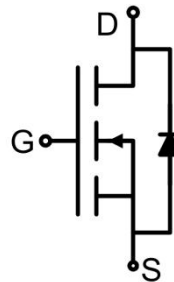
- Power Management Switches
- DC/DC Converters

### Package

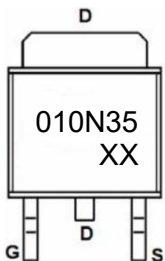


TO-252AB

### Circuit diagram



### Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	25	A
Pulsed Drain Current	$I_{DM}$	100	A
Power Dissipation	$P_D$	70	W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.78	°C/W
Single pulse avalanche energy <sup>1)</sup>	$E_{AS}$	100	mJ
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55 ~ +150	°C

### Electrical characteristics (TA=25°C unless otherwise noted)

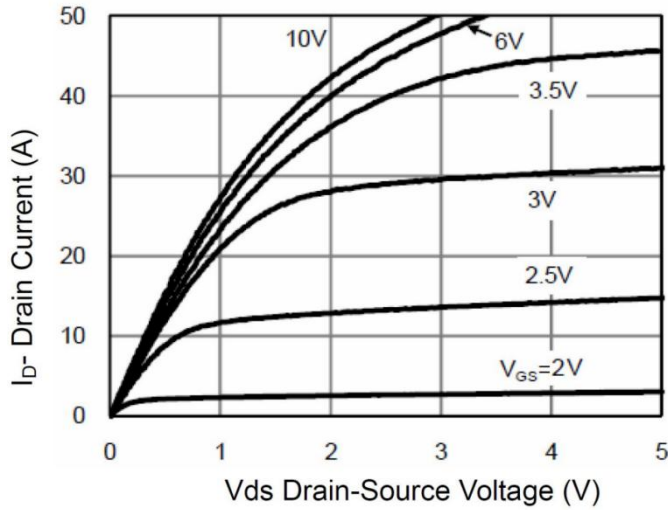
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 80V, V_{GS} = 0V$			1.0	μA
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			±100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	2.5	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$		35	50	mΩ
		$V_{GS} = 4.5V, I_D = 6A$		40	55	
<b>Dynamic characteristics<sup>2)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$		3000		pF
Output Capacitance	$C_{oss}$			96		
Reverse Transfer Capacitance	$C_{rss}$			55		
Total Gate Charge	$Q_g$	$V_{DS} = 50V, V_{GS} = 10V, I_D = 25A$		70		nC
Gate-Source Charge	$Q_{gs}$			9		
Gate-Drain Charge	$Q_{gd}$			18		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 50V, V_{GS} = 10V, I_D = 10A, R_G = 3\Omega$		9		nS
Turn-on rise time	$t_r$			8		
Turn-off delay time	$t_{d(off)}$			32		
Turn-off fall time	$t_f$			9		
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage	$V_{SD}$	$V_{GS} = 0V, I_S = 1A$			1.2	V

Notes:

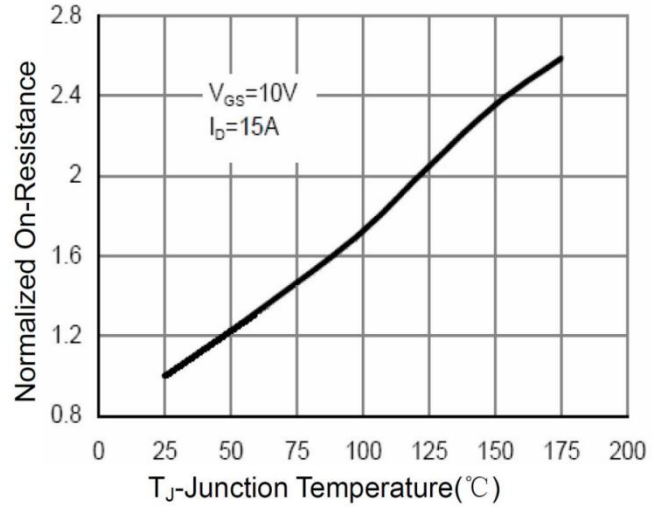
1) EAS condition:  $V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH, R_g = 25\Omega$

2) Guaranteed by design, not subject to production.

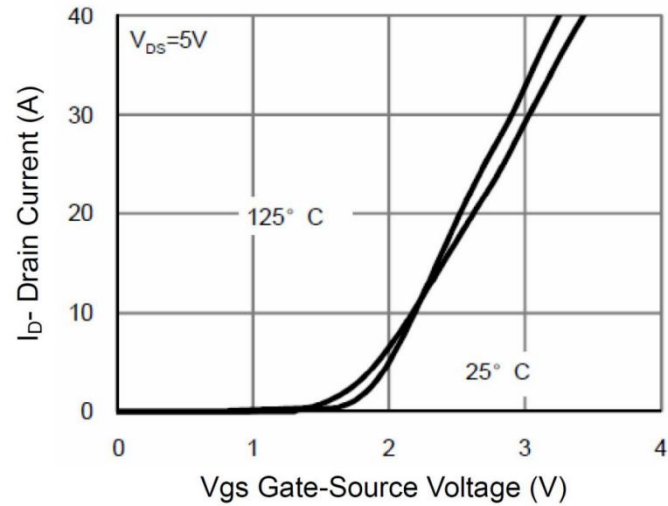
## Typical Characteristics



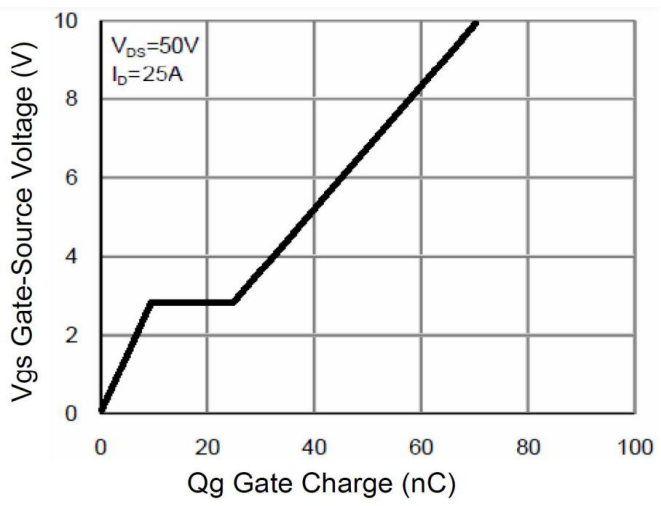
**Output Characteristics**



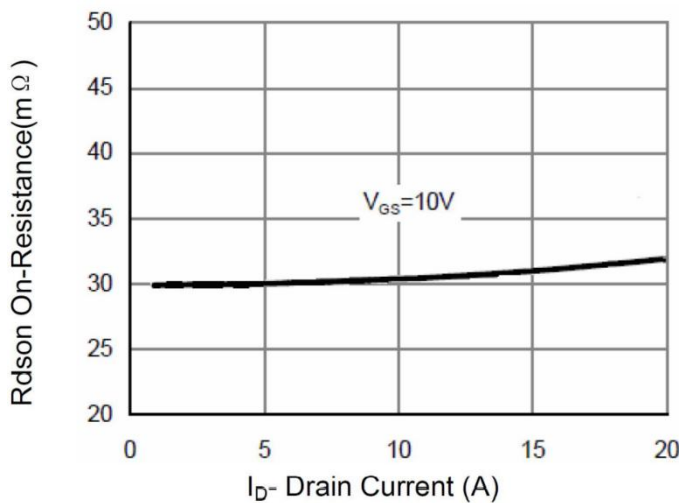
**Rdson-Junction Temperature**



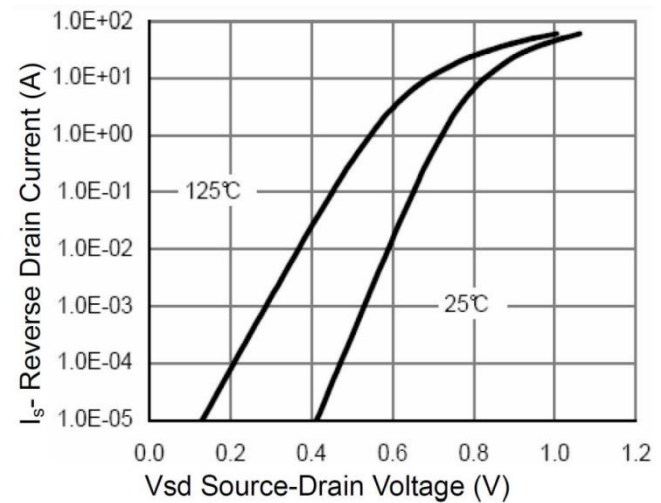
**Transfer Characteristics**



**Gate Charge**

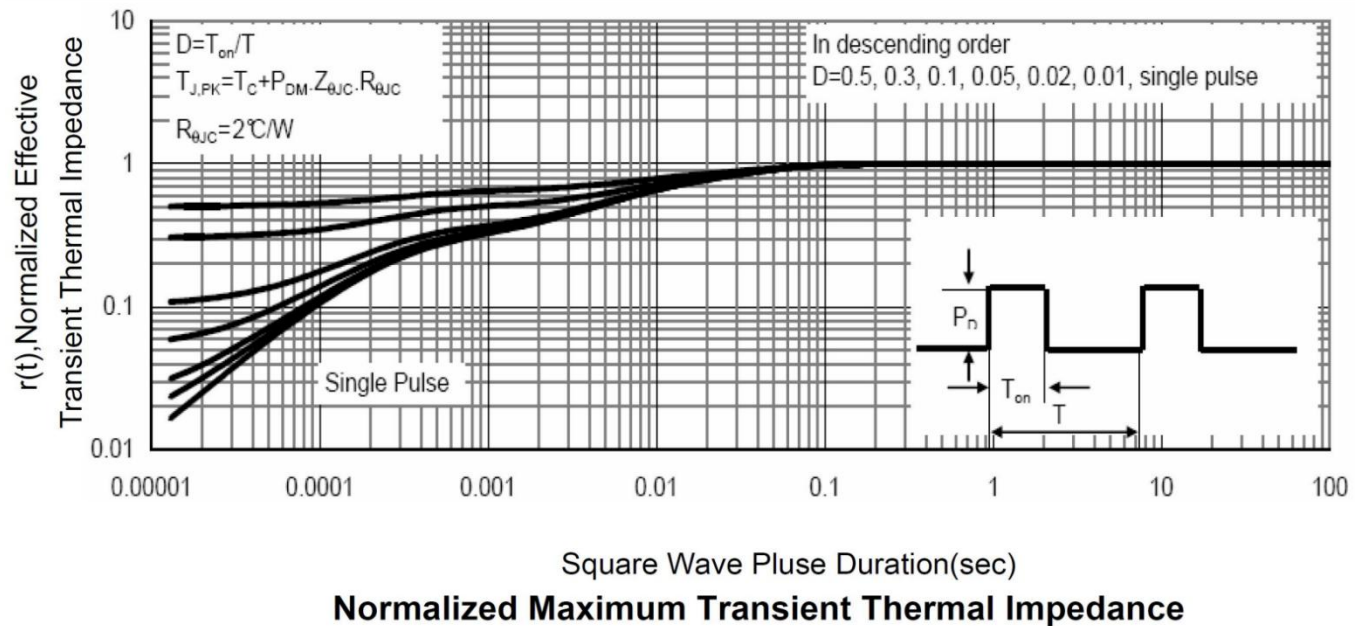
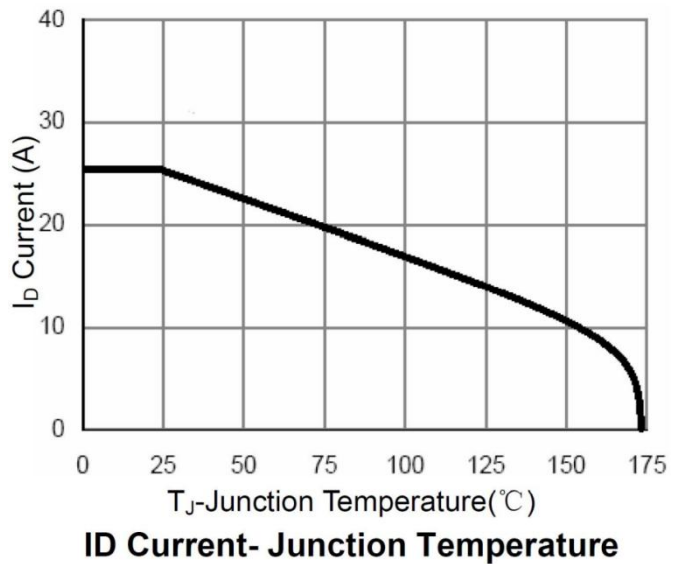
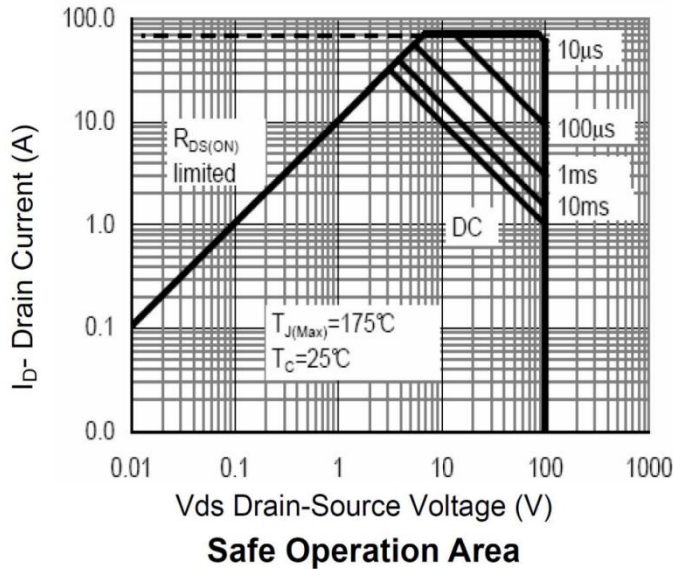
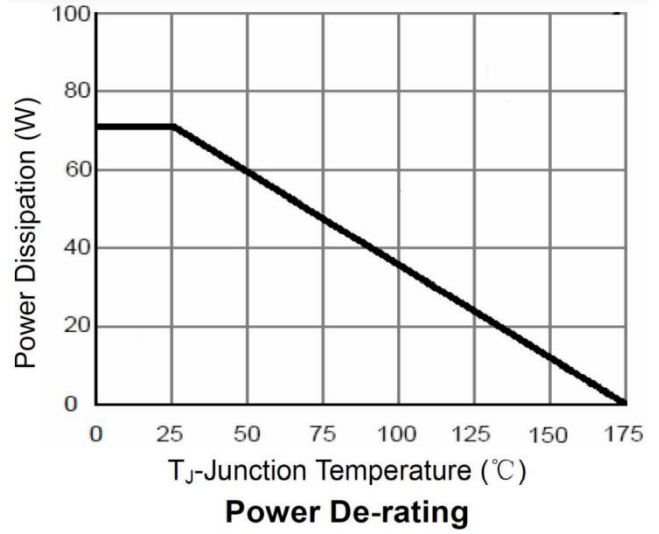
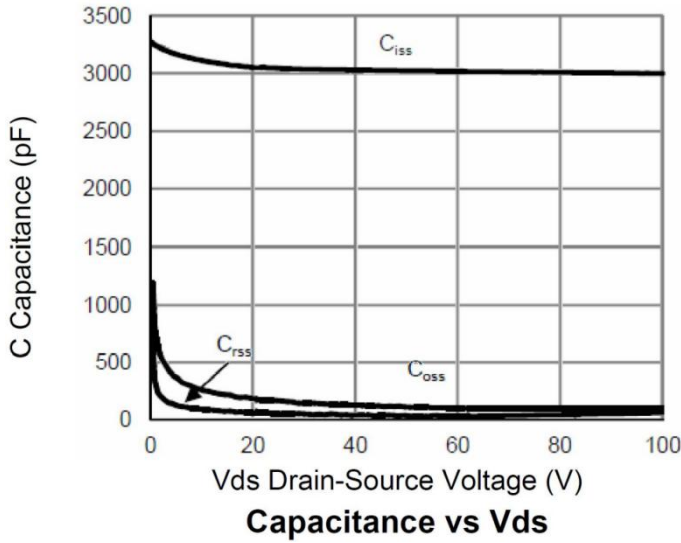


**Rdson- Drain Current**

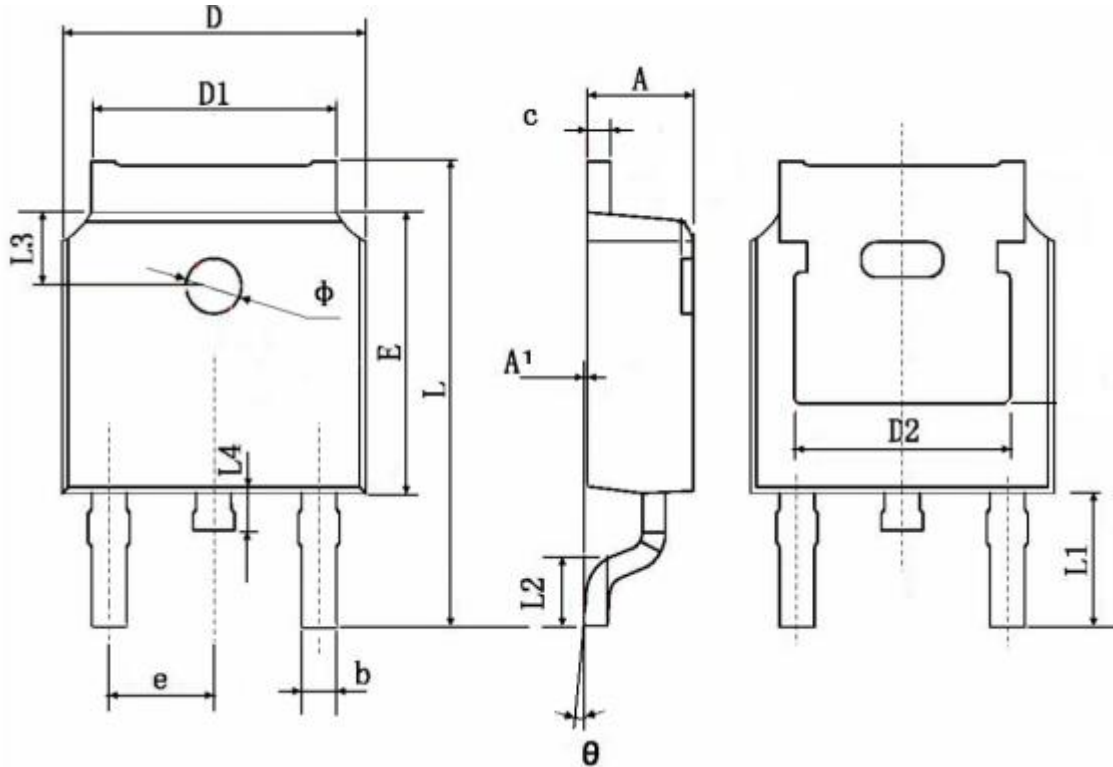


**Source- Drain Diode Forward**

## Typical Characteristics



### 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	0.130	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.500	0.201	0.217
D2	4.830 REF		0.190 REF	
E	6.000	6.200	0.236	0.244
e	2.186	2.390	0.086	0.094
L	9.800	10.500	0.386	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
$\phi$	1.100	1.300	0.043	0.051
$\theta$	0°	8°	0°	8°