AD30P10S

P-Channel Enhancement Mode Power MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-100V	50mΩ@-10V	-30A
	65mΩ@-4.5V	

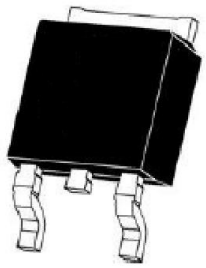
Feature

- Fast Switching
- Low Gate Charge
- Low reverse transfer capacitance

Application

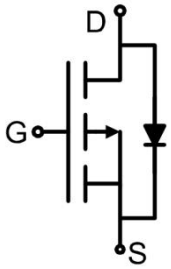
- Motor Control
- Switching Regulators
- Isolated DC/DC Converter

Package

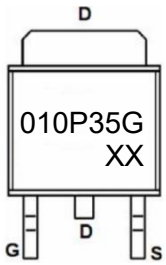


TO-252AB

Circuit diagram



Marking



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Absolute maximum ratings (Ta=25℃ 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	-30	A
Pulsed Drain Current	I_{DM}	-120	A
Power Dissipation(T_C=25℃)	P_D	120	W
Thermal Resistance,Junction-to-Case	$R_{\theta JC}$	1.04	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~ +150	℃

Electrical characteristics (Ta=25℃ unless otherwise noted)

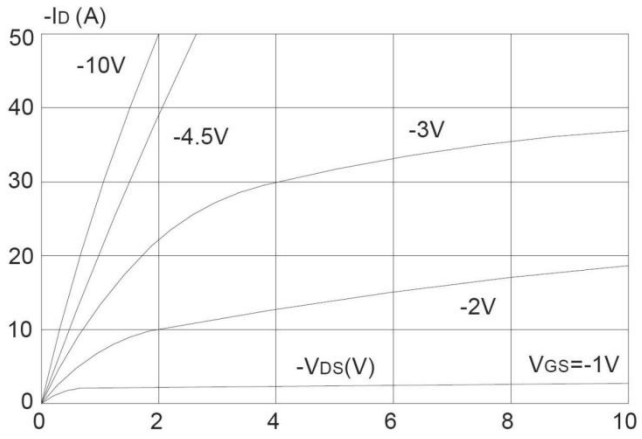
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-100V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1.0	-1.6	-2.5	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-15A		35	50	mΩ
		V_{DS} =-4.5V, I_D =-10A		45	65	
Dynamic characteristics[1)]						
Input Capacitance	C_{iss}	V_{DS} =-50V,V_{GS} =0V,f =1MHz		2205		pF
Output Capacitance	C_{oss}			197		
Reverse Transfer Capacitance	C_{rss}			14		
Total Gate Charge	Q_g	V_{DS} =-10V,V_{DS} =-50V, I_D =-5A		41		nC
Gate-Source Charge	Q_{gs}			8.1		
Gate-Drain Charge	Q_{gd}			8.2		
Turn-on delay time	$t_{d(on)}$	V_{DD}=-50V,I_D=-5A, V_{GS} =-10V,R_{GEN}=6Ω		13		nS
Turn-on rise time	t_r			37		
Turn-off delay time	$t_{d(off)}$			101		
Turn-off fall time	t_f			104		
Source-Drain Diode characteristics						
Continuous Source Current	I_S				-30	A
Diode Forward voltage	V_{SD}	V_{GS} =0V, I_S=-1A			-1.2	V

Notes:

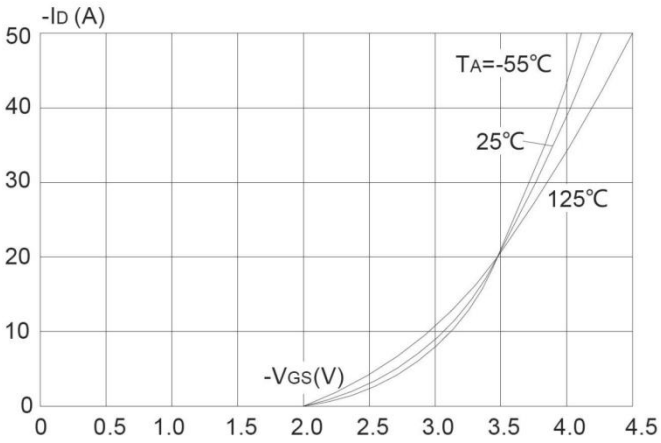
1) Guaranteed by design, not subject to production testing.

Typical Characteristics

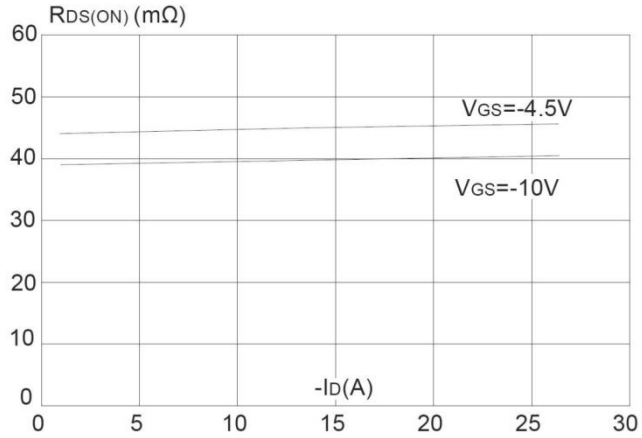
Output Characteristics



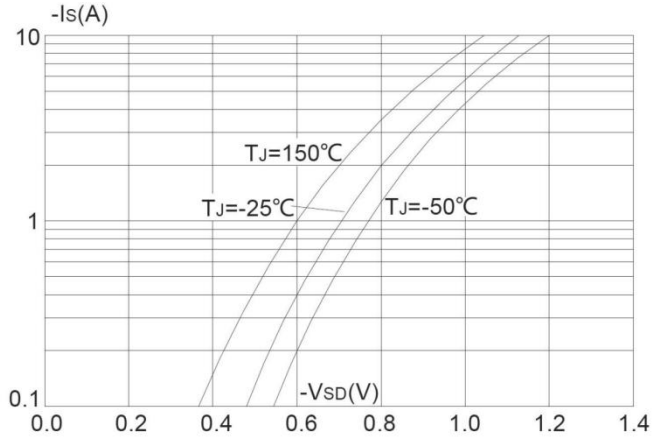
Typical Transfer Characteristics



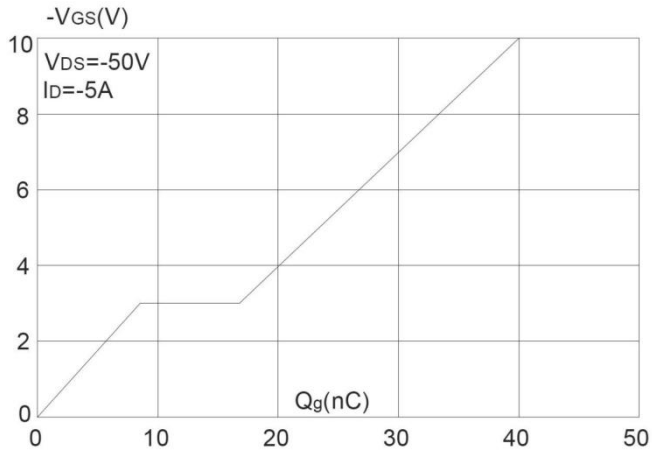
On-resistance vs. Drain Current



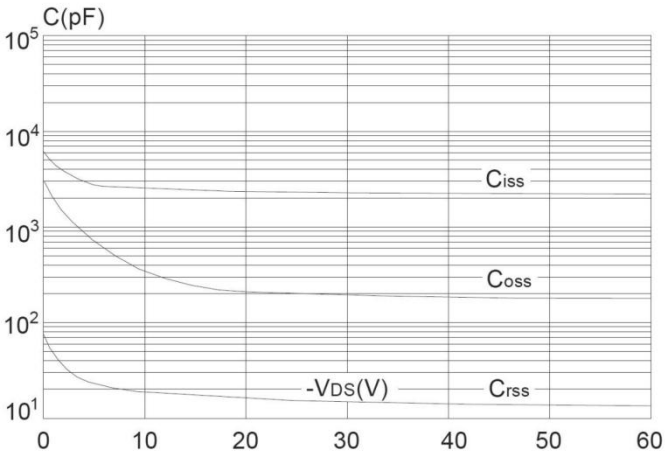
Body Diode Characteristics



Gate Charge Characteristics

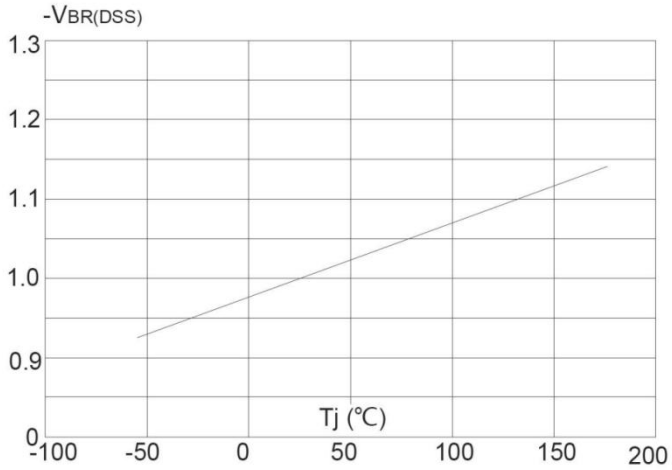


Capacitance Characteristics

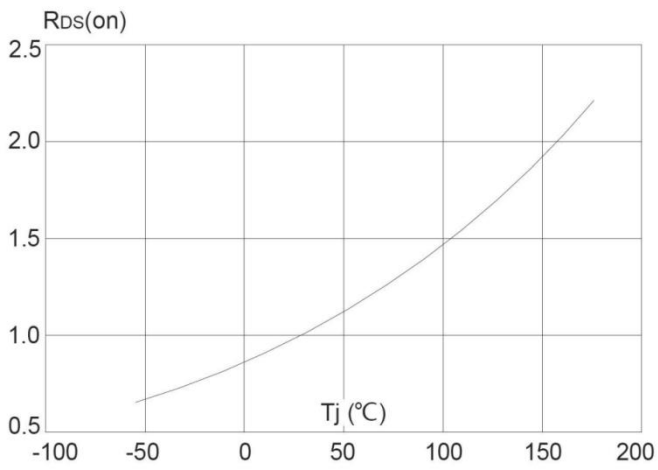


Typical Characteristic

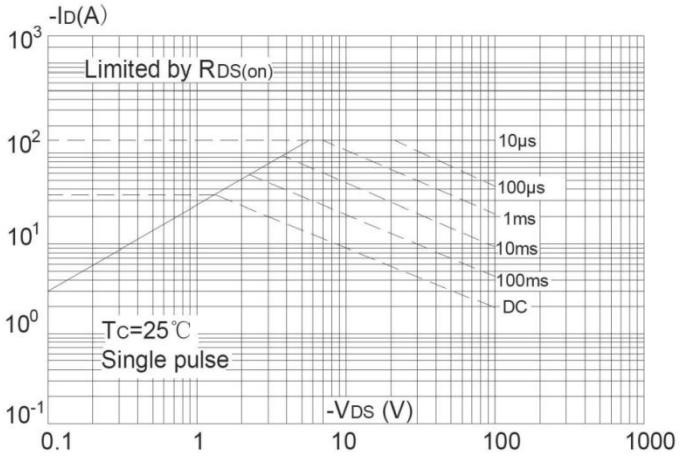
Normalized Breakdown Voltage vs. Junction Temperature



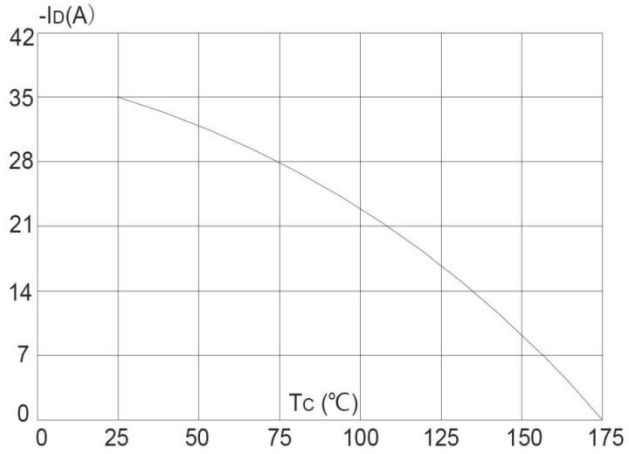
Normalized on Resistance vs. Junction Temperature



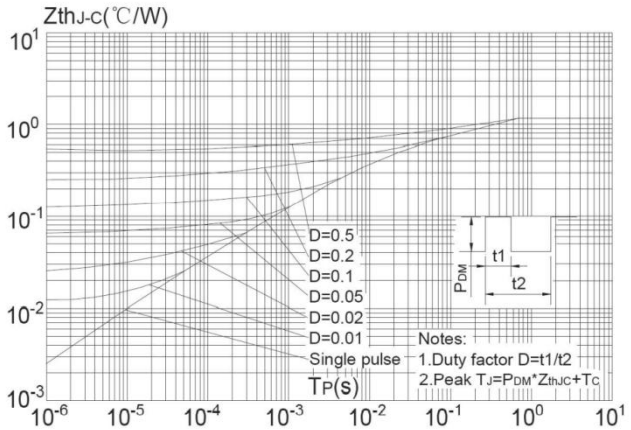
Maximum Safe Operating Area



Maximum Continuous Drain Current vs. Case Temperature



Maximum Effective Transient Thermal Impedance, Junction-to-Case



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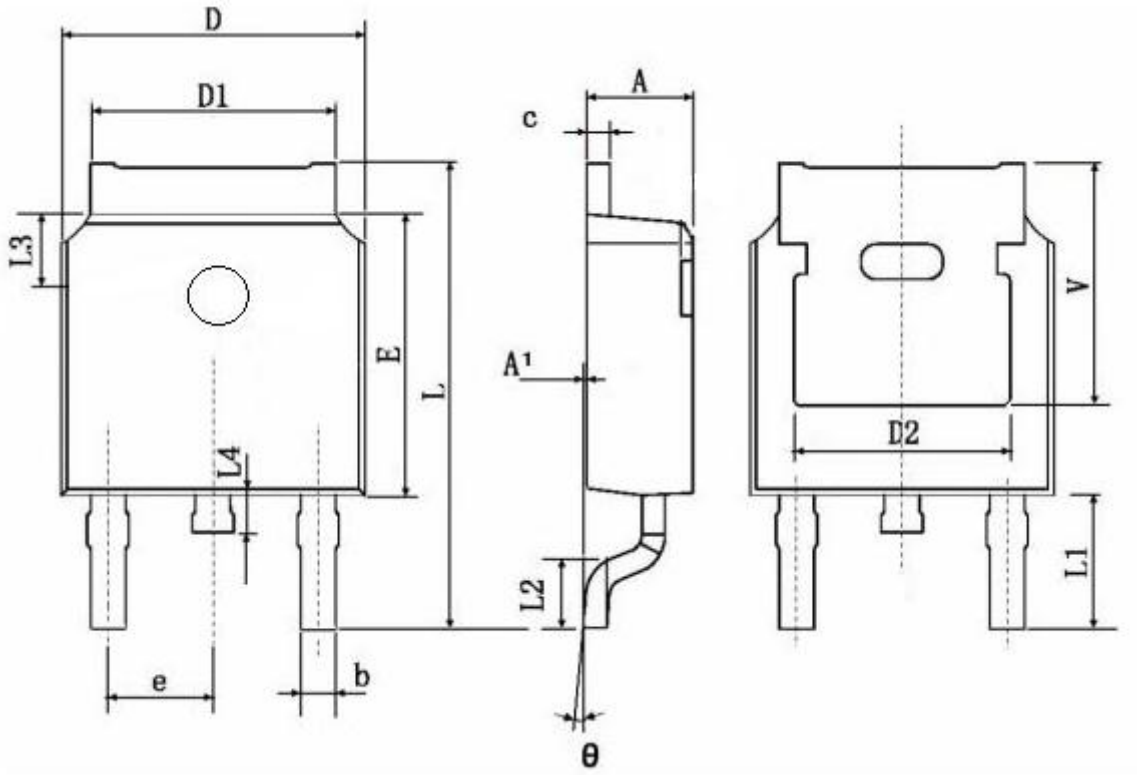
TO-252AB Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.200	0.000	0.008
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	2.386	0.086	0.094
L	9.800	10.500	0.386	0.413
L1	2.900 REF.		0.114 REF.	
L2	1.250	1.750	0.049	0.069
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.023	0.039
V	5.350 REF.		0.211 REF.	
θ	0°	8°	0°	8°