

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-60V	40mΩ@-10V	-30A
	50mΩ@-4.5V	

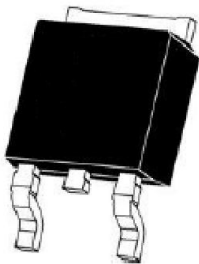
Feature

- High switching speed
- Low Gate Charge
- Low reverse transfer capacitance

Application

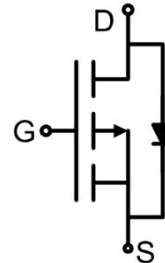
- Load Switches, Adaptor Switch
- Notebook PCs

Package

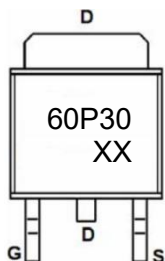


TO-252AB

Circuit diagram



Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-30	A
Pulsed Drain Current	I_{DM}	-120	A
Power Dissipation	P_D	60	W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	2.1	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}C$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-60			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -60V, V_{GS} = 0V$			-1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.5	-2.5	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -5A$		30	40	m Ω
		$V_{DS} = -4.5V, I_D = -4A$		38	50	
Dynamic characteristics¹⁾						
Input Capacitance	C_{iss}	$V_{DS} = -30V, V_{GS} = 0V, f = 1MHz$		2417		pF
Output Capacitance	C_{oss}			179		
Reverse Transfer Capacitance	C_{rss}			120		
Total Gate Charge	Q_g	$V_{DS} = -30V, V_{GS} = -10V, I_D = -6.2A$		46.5		nC
Gate-Source Charge	Q_{gs}			9.1		
Gate-Drain Charge	Q_{gd}			9.2		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = -30V, V_{GS} = -10V, R_L = 4.7\Omega, R_{GEN} = 3\Omega$		9.8		nS
Turn-on rise time	t_r			6.1		
Turn-off delay time	$t_{d(off)}$			44		
Turn-off fall time	t_f			12.7		
Source-Drain Diode characteristics						
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

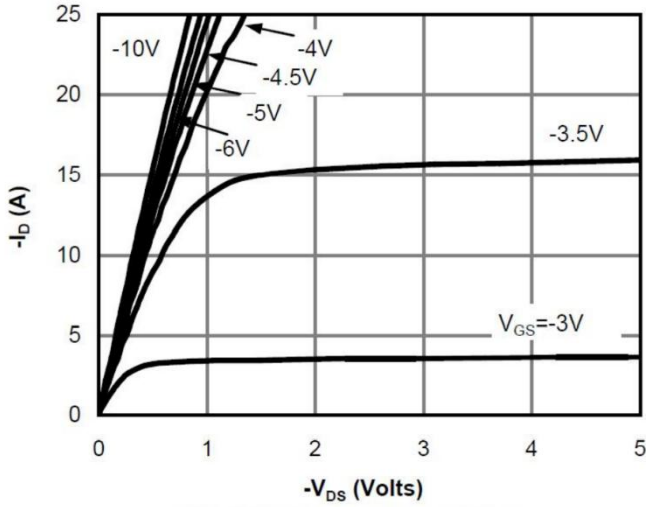


Fig 1: On-Region Characteristics

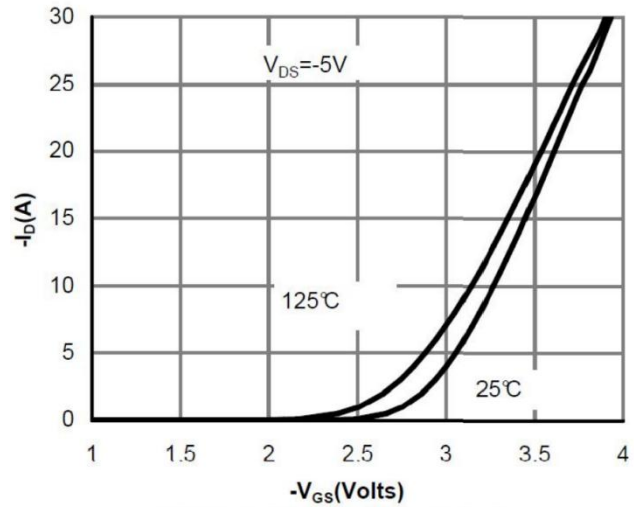


Figure 2: Transfer Characteristics

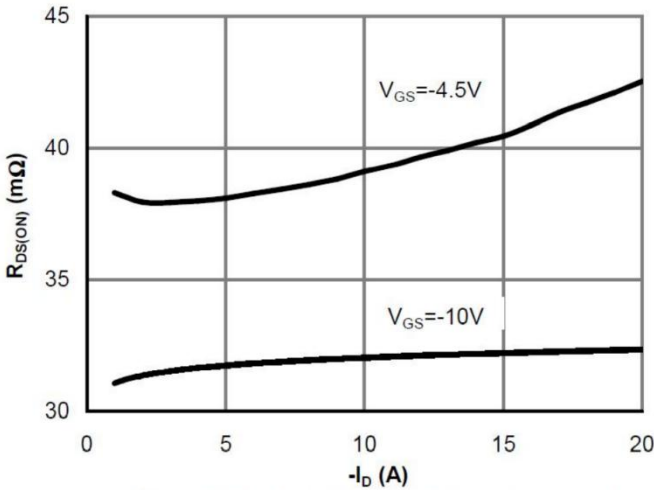


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

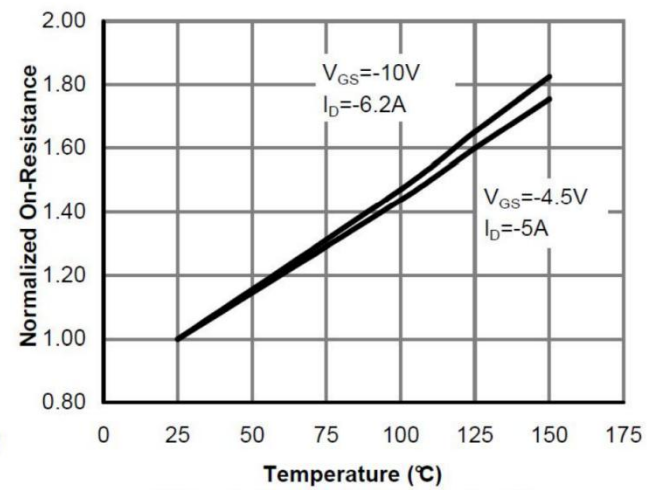


Figure 4: On-Resistance vs. Junction Temperature

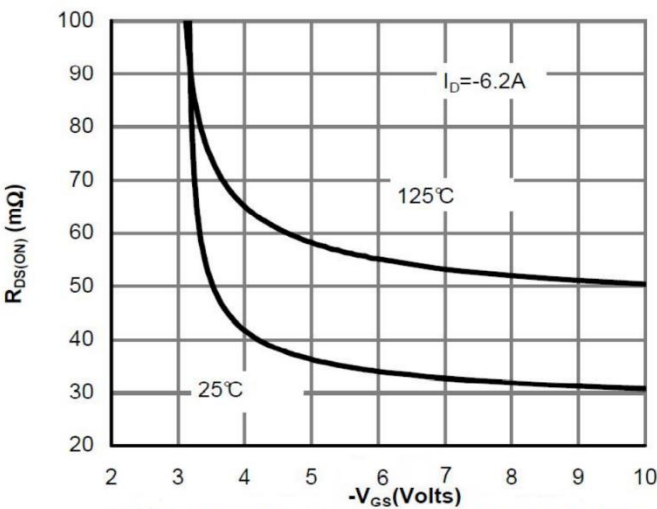


Figure 5: On-Resistance vs. Gate-Source Voltage

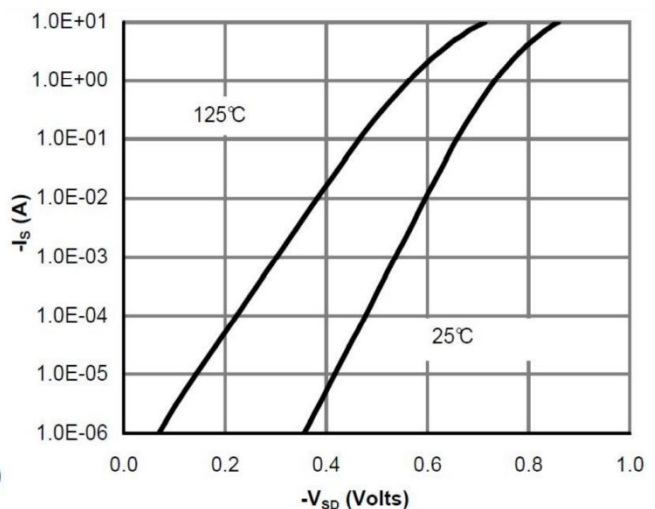


Figure 6: Body-Diode Characteristics

Typical Characteristic

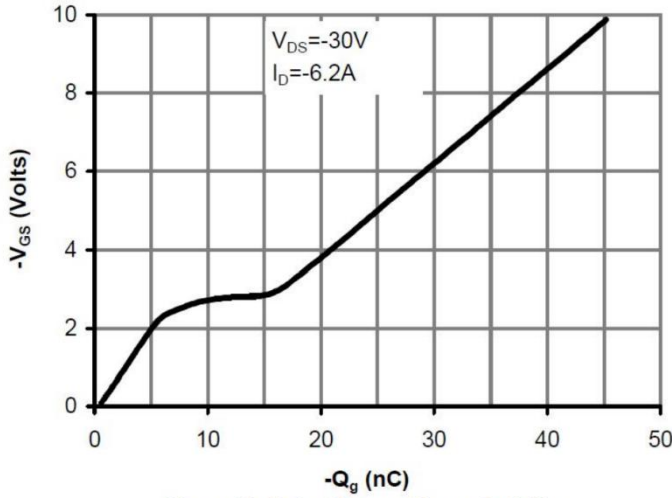


Figure 7: Gate-Charge Characteristics

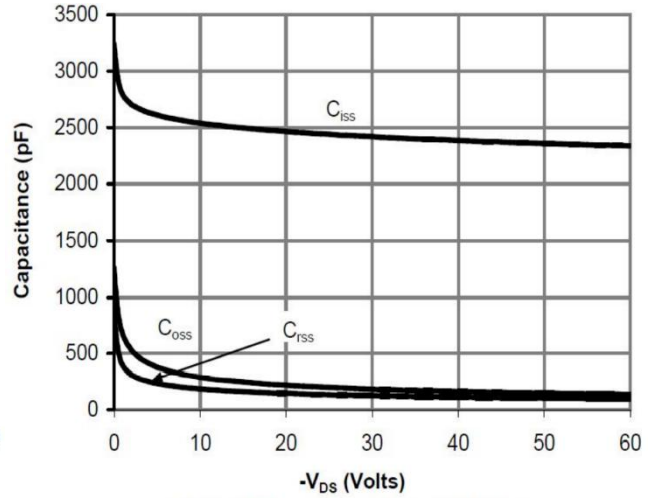


Figure 8: Capacitance Characteristics

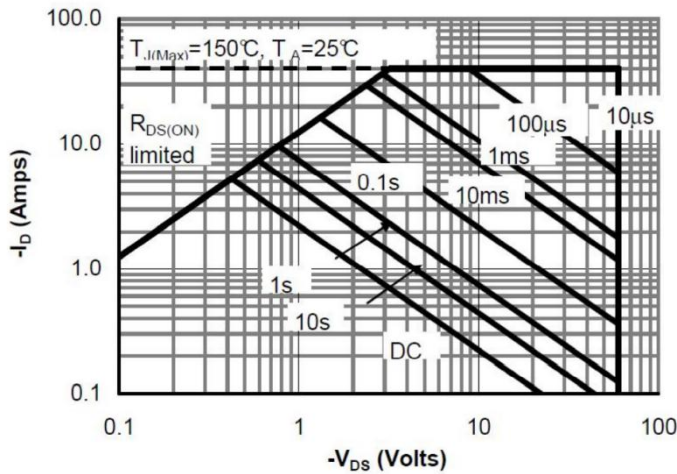


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

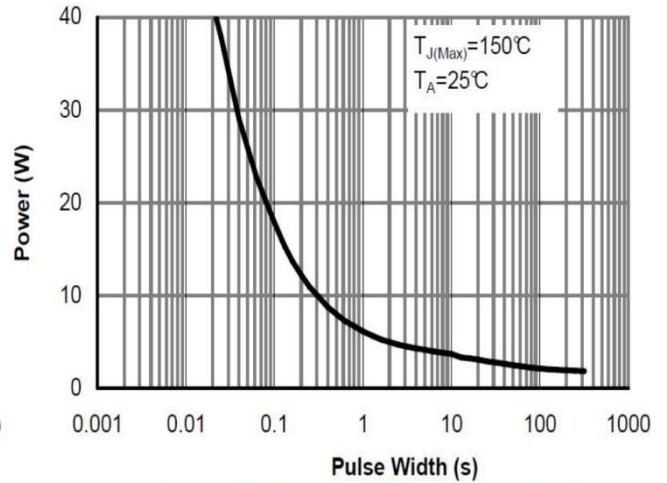


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

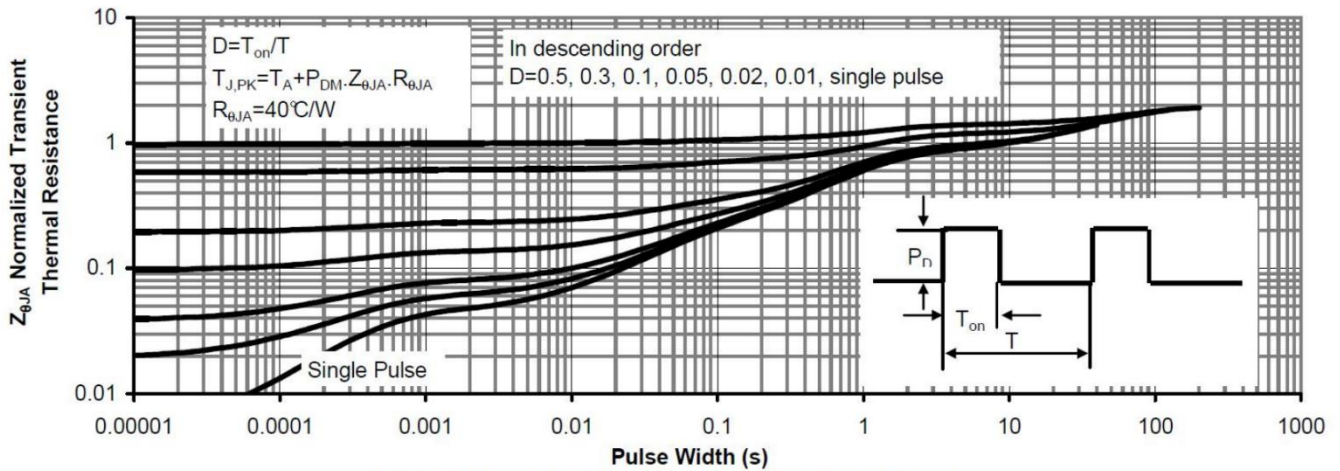
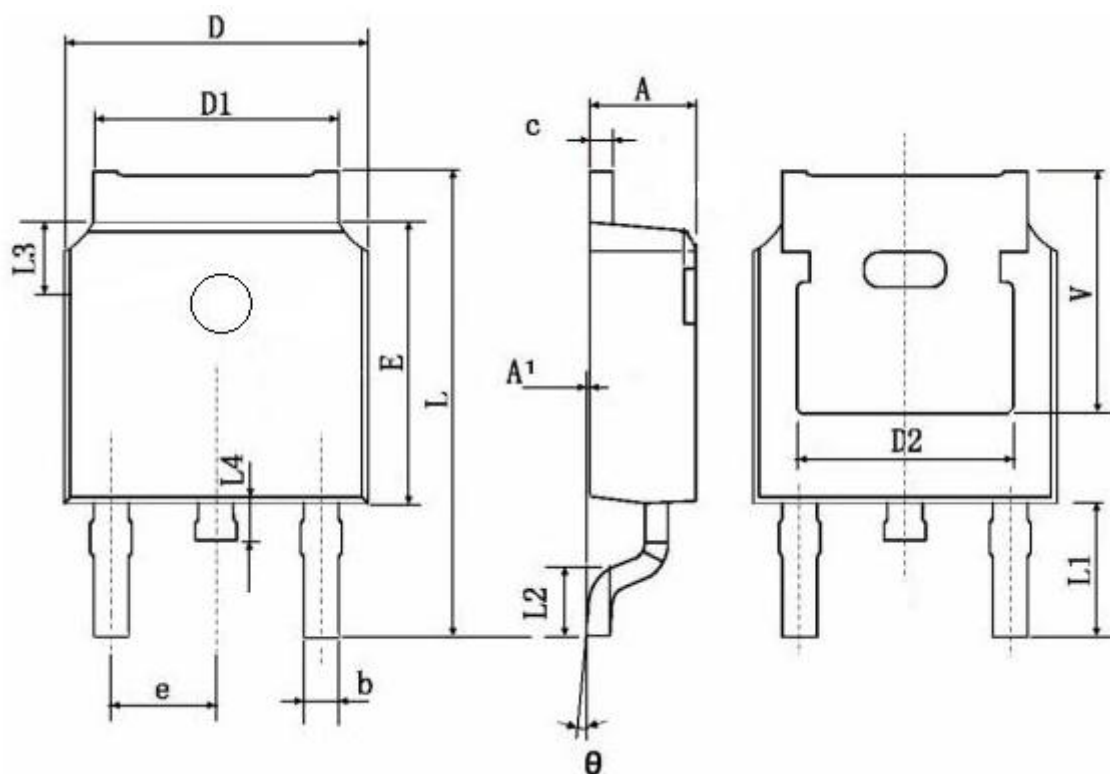


Figure 11: Normalized Maximum Transient Thermal Impedance

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°