

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	3.4mΩ@-10V	-100A
	4.8mΩ@-4.5V	

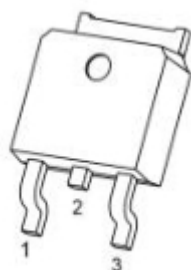
Feature

- High switching speed
- Low Gate Charge
- High density cell design for ultra low Rdson
- 100% Single Pulse avalanche energy Test

Application

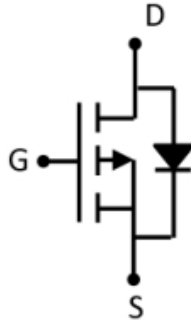
- Load Switching
- DC-DC

Package



TO-252(1:G 2:D 3:S)

Circuit diagram



Marking



30P03 =Device Code
****** =Week Code

Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-30	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous(T _C =25°C)	I _D	-100	A
Pulsed Drain Current	I _{DM}	-400	A
Single Pulse Avalanche Energy ²	E _{AS}	306	mJ
Maximum Power Dissipation(T _C =25°C)	P _D	89	W
Thermal Resistance,Junction-to-Case	R _{θJC}	1.4	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55~+150	°C

Electrical characteristics

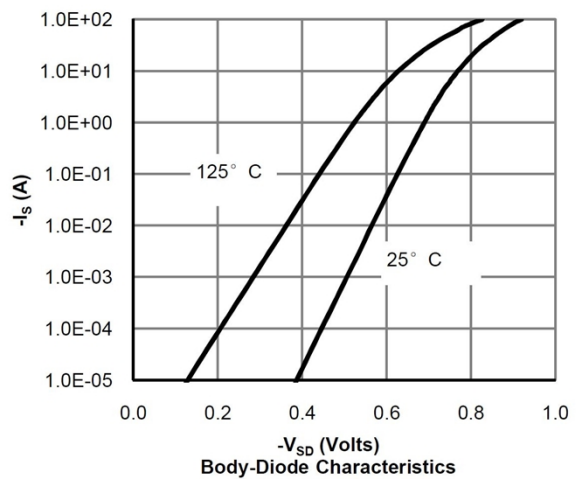
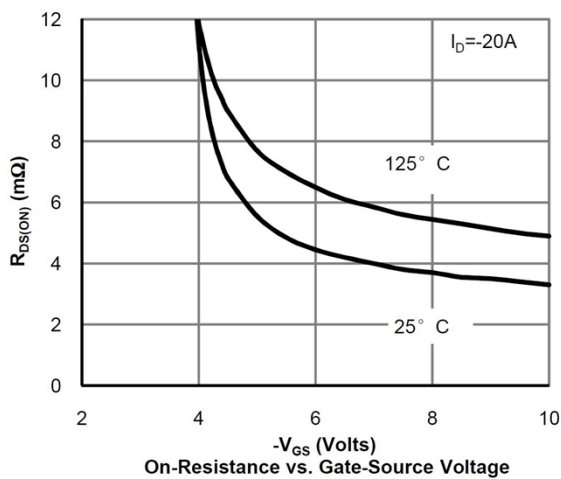
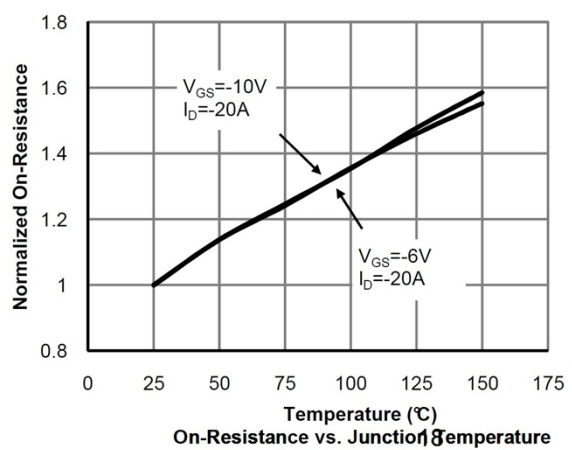
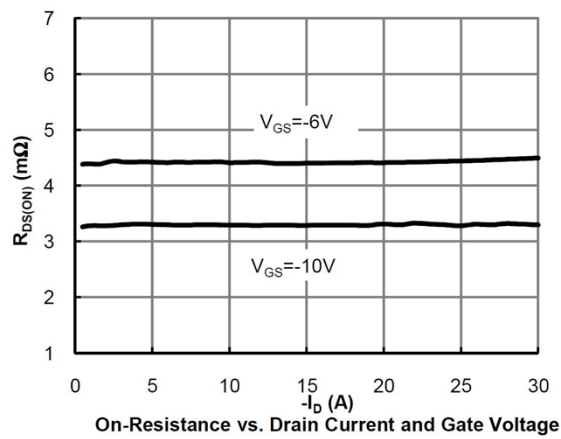
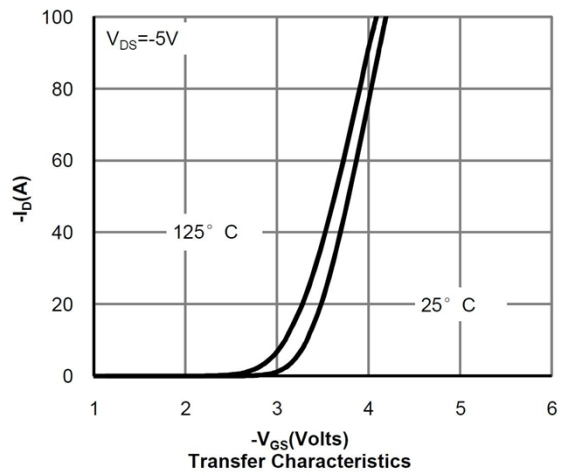
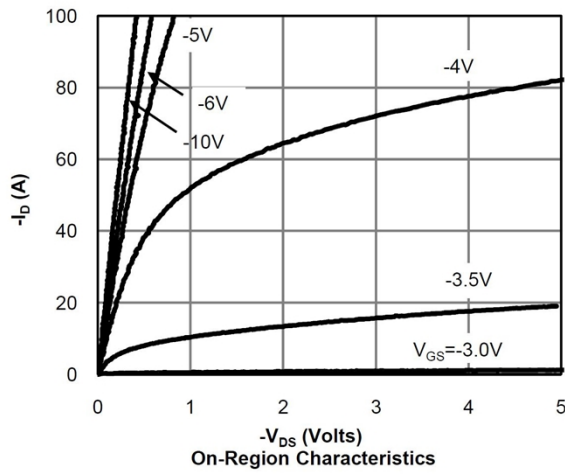
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

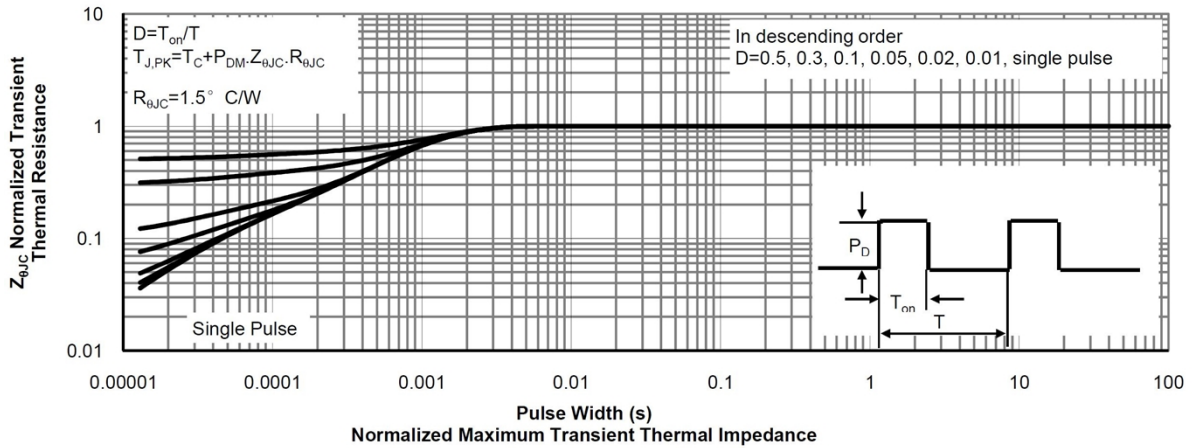
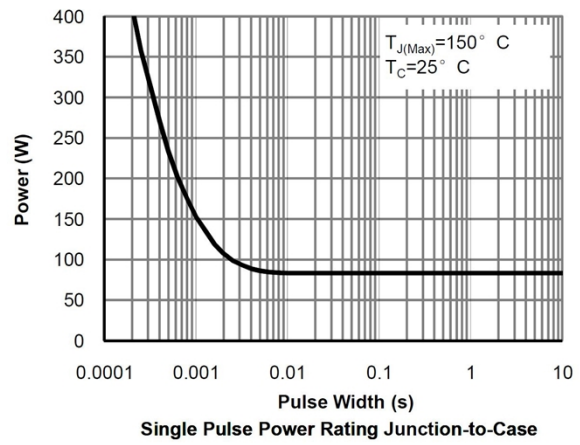
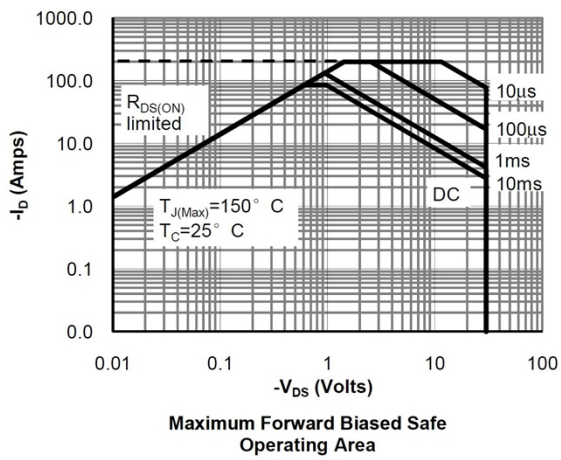
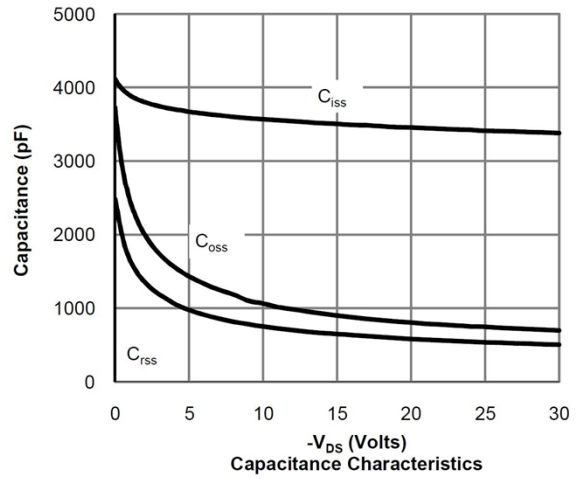
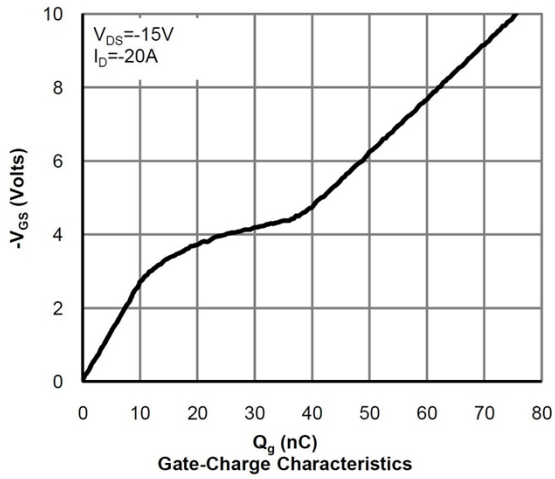
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V _{GS} = 0V, I _D = -250μA	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24V, V _{GS} = 0V			-1	uA
Gate-Source Leakage	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±100	uA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = -250μA	-1	-1.6	-2.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -30A		3.4	4.3	mΩ
		V _{GS} = -4.5V, I _D = -20A		4.8	6.4	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} =0V, f=1MHz		5700		pF
Output Capacitance	C _{Oss}			859		
Reverse Transfer Capacitance	C _{rss}			650		
Switching Characteristics						
Total Gate Charge	Q _g	V _{DD} = -15V , I _D =20A, V _{GS} = -10V		75		nC
Gate-Source Charge	Q _{gs}			13		
Gate-Drain Charge	Q _{gd}			23		
Turn-on Delay Time	T _{d(on)}	V _{DD} = -15V, R _L =0.75Ω, V _{GEN} = -10V, R _{GEN} =3Ω		14		nS
Turn-on Rise Time	T _r			16		
Turn-off Delay Time	T _{d(off)}			94		
Turn-off Fall Time	T _f			75		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V,I _S = -1A			-1	V

Note:

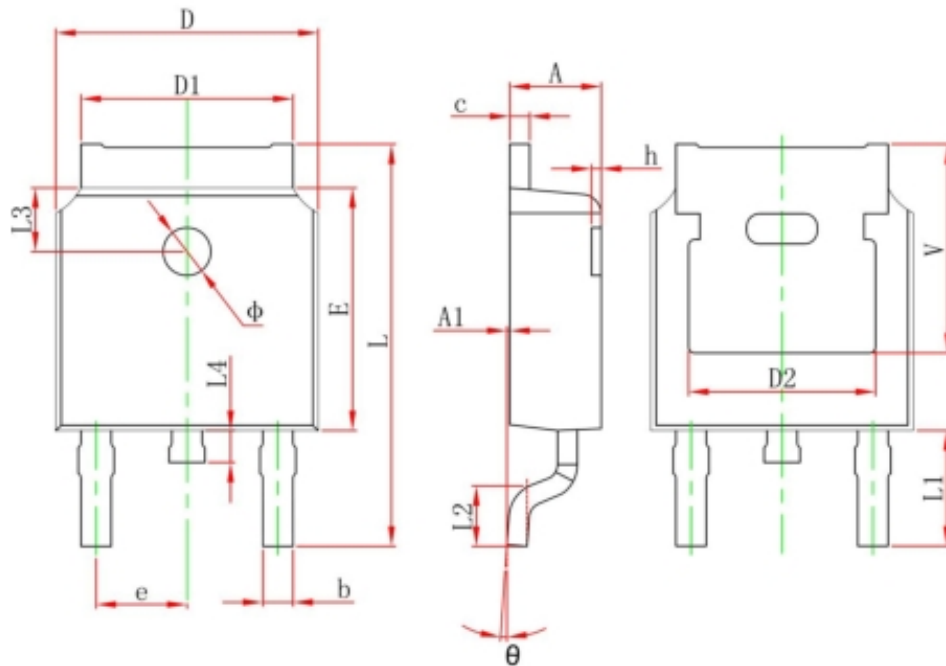
1. The E_{AS} data shows Max. rating . The test condition is $V_{DD} = -15V, V_{GS} = -10V, L = 0.5mH, R_g = 25\Omega$

Typical Characteristics





TO-252 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	0.127	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	5.460	0.201	0.215
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	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
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.	