

Product Summary

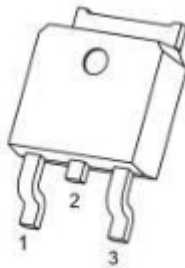
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	3.3m Ω @10V	90A
	5m Ω @4.5V	

Feature

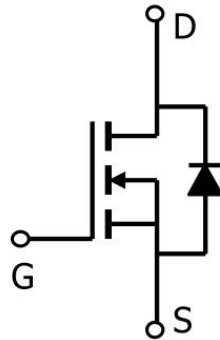
- Fast Switching
- Low Gate Charge and Rdson
- 100% Single Pulse avalanche energy Test

Application

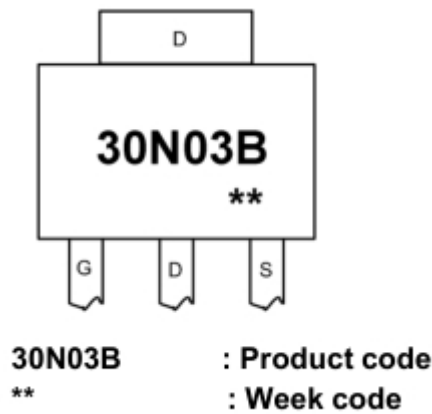
- Power switching application
- DC-DC Converter
- Power Management

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

Circuit diagram



Marking



Absolute maximum ratings

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

Parameter	Symbol	Value	Unit
Drain source voltage	V_{DS}	30	V
Gate source voltage	V_{GS}	± 20	V
Continuous drain current($T_c=25^{\circ}\text{C}$)	I_D	90	A
Pulsed drain current	I_{DM}	360	A
Power dissipation($T_c=25^{\circ}\text{C}$)	P_D	113	W
Single pulsed avalanche energy ¹	E_{AS}	245	mJ
Thermal resistance, junction-case	$R_{\theta JC}$	1.1	$^{\circ}\text{C}/\text{W}$
Operation and storage temperature	T_{STG}, T_J	-55 to 150	$^{\circ}\text{C}$

Electrical characteristics

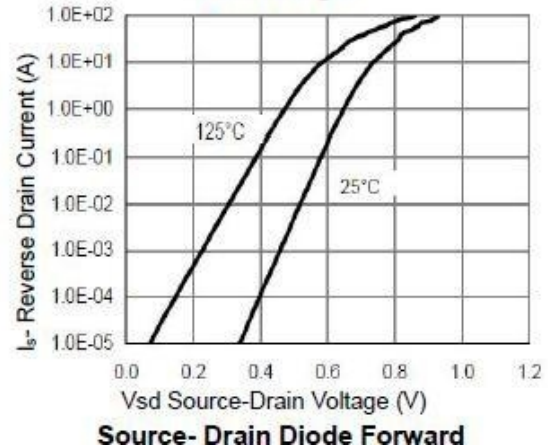
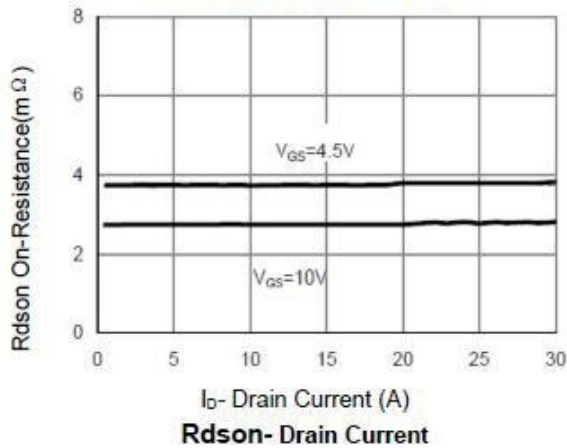
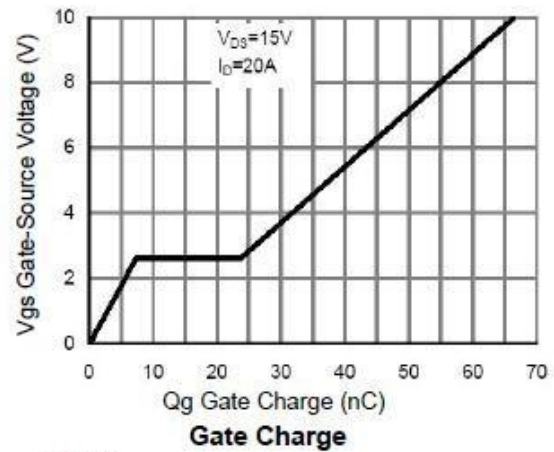
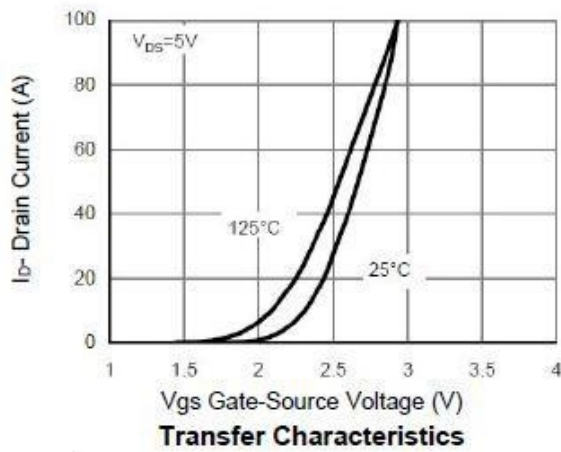
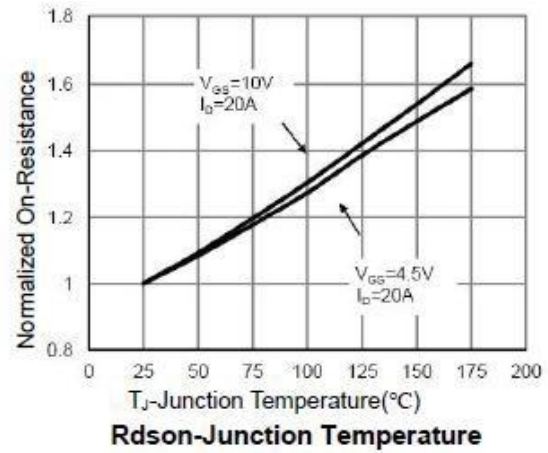
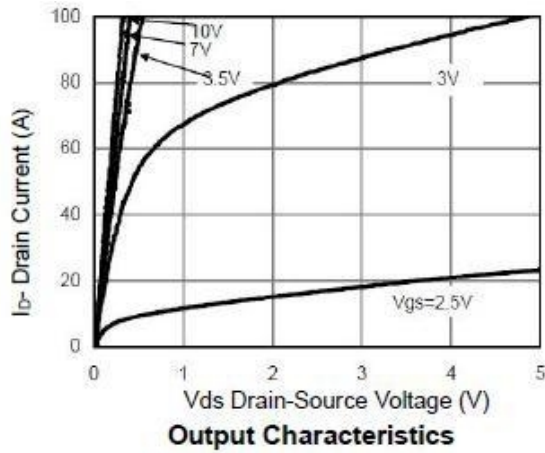
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

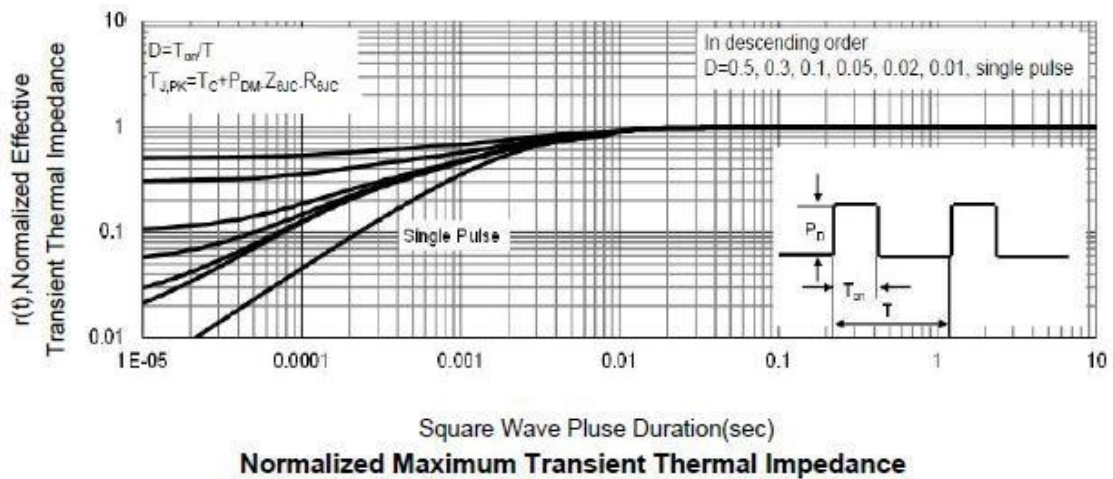
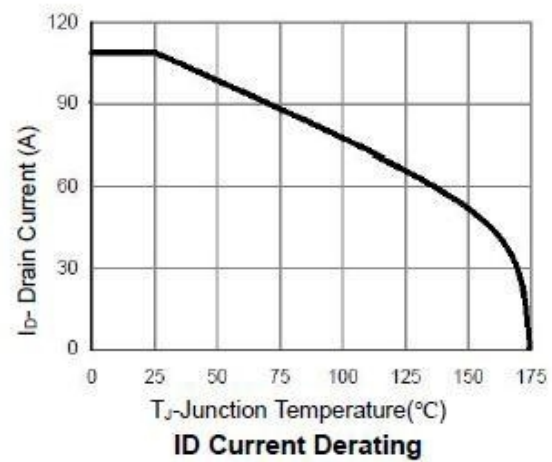
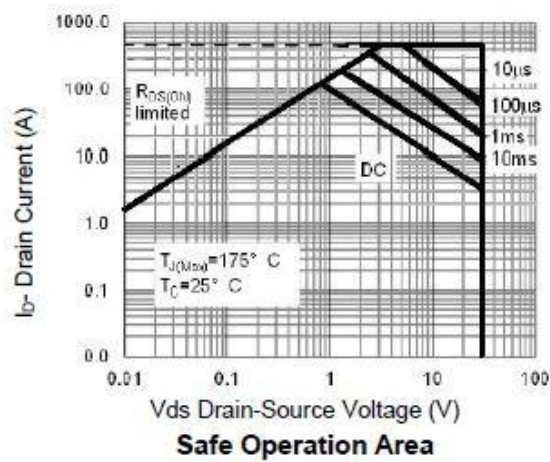
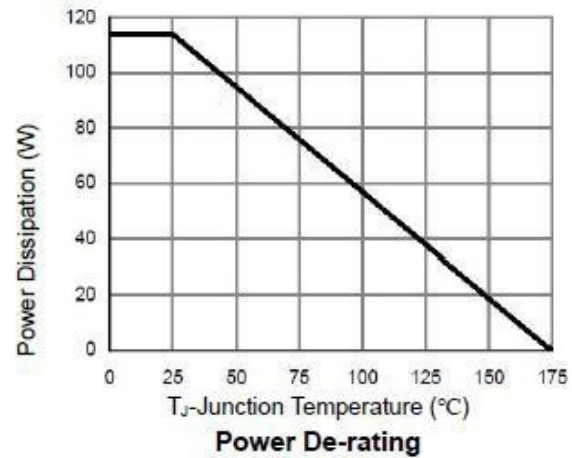
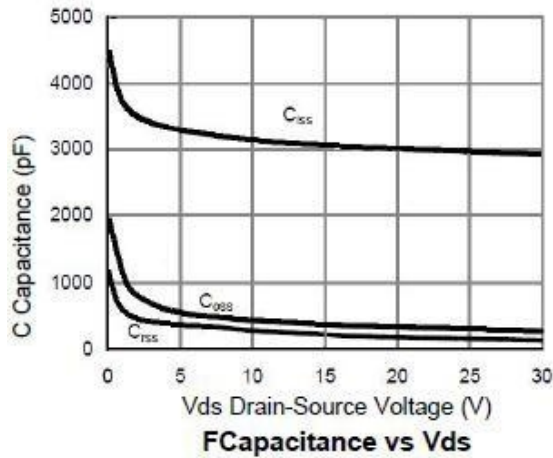
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-source breakdown voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	30			V
Drain Cut-Off Current	I _{DSS}	V _{DS} =24V,V _{GS} = 0V			1	uA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V , V _{DS} =0V			±0.1	uA
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2.5	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A		3.3	4.2	mΩ
		V _{GS} =4.5V, I _D =10A		5	7	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz		2571		pF
Output Capacitance	C _{oss}			385		
Reverse Transfer Capacitance	C _{rss}			356		
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =10V, I _D =20A		66		pF
Gate-Source Charge	Q _{gs}			7		
Gate-Drain Charge	Q _{gd}			17		
Turn-On Delay Time	T _{d(on)}	V _{GS} =10V, V _{DS} =15V, I _D =20A, R _{GEN} =3Ω		11		nS
Rise Time	T _r			14		
Turn-Off Delay Time	T _{d(off)}			36		
Fall Time	T _f			12		
Drain-Source Diode Characteristics						
Source-Drain Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =1A			1.2	V

Note:

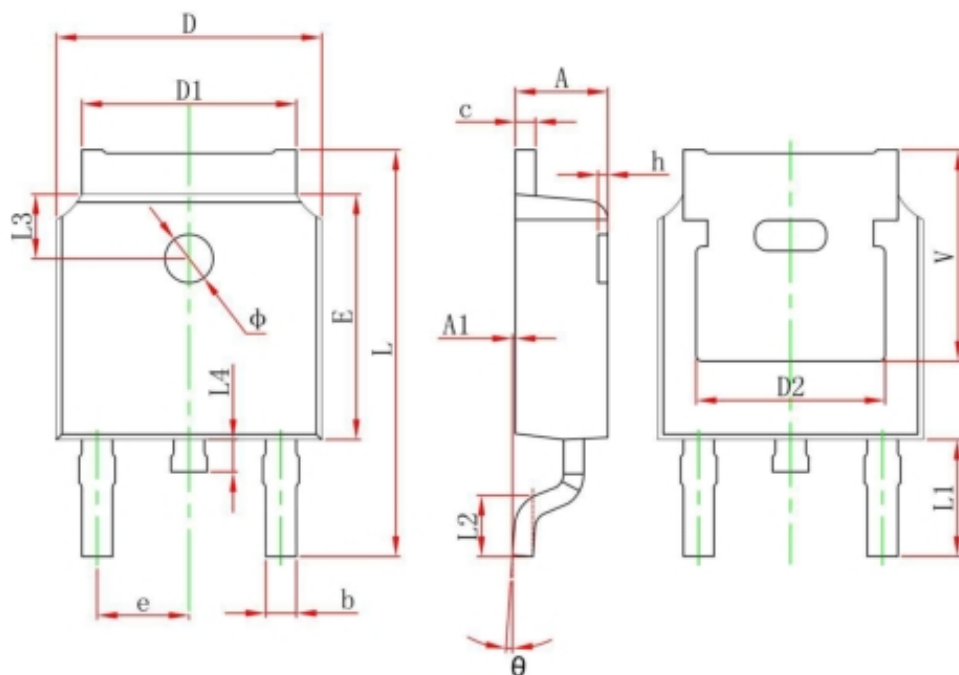
1. E_{AS} is tested at starting $T_j = 25^{\circ}\text{C}$, $V_{DD} = 15V, V_{GS} = 10V, L = 0.5mH, R_g = 25\Omega$;

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.	