

**Features**

- $V_{DS} = 30V$
- $R_{DS(ON)} = 1.6m\Omega @ V_{GS}=10 @ I_{DS}=30A$
- $R_{DS(ON)} = 2.1m\Omega @ V_{GS}=4.5 @ I_{DS}=25A$

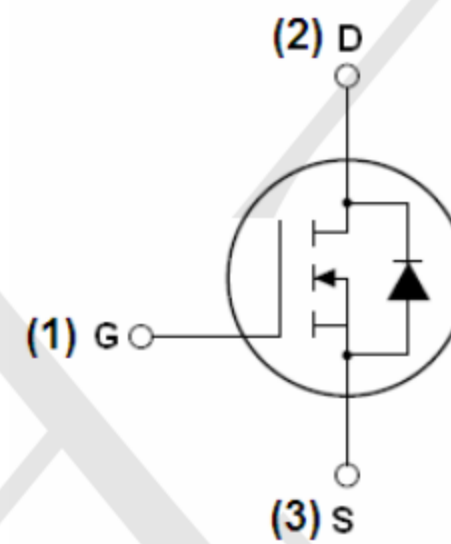
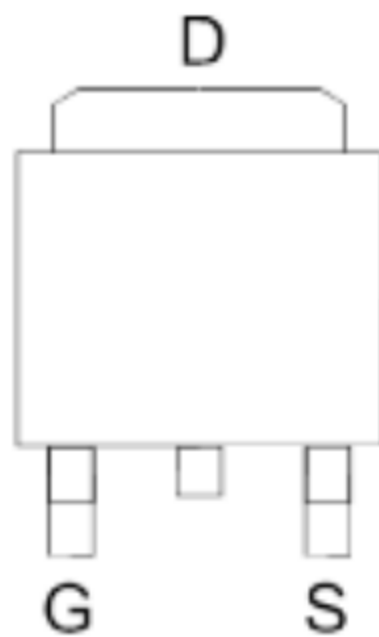
**Application**

- Simple Drive Requirement
- Small Package Outline
- Surface Mount Device

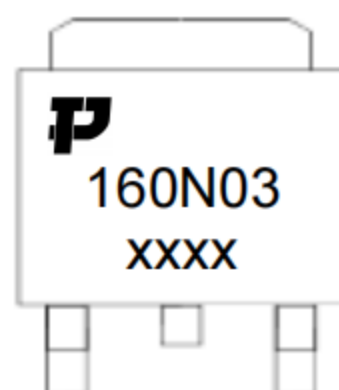
**Package and Pin Configuration**

(TO-252-3L)

Top View



**Marking:**



**Absolute Maximum Ratings ( $T_A=25^{\circ}C$  unless otherwise noted)**

Parameter	Symbol	Rating	Units
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current	Continuous	150	A
	Pulsed	340	
Total Power Dissipation	@ $T_A=25^{\circ}C$	90	W
Operating Junction Temperature Range	$T_J$	-55 to 150	$^{\circ}C$

**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

Electrical Characteristics (T <sub>J</sub> =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>OFF CHARACTERISTICS (Note 2)</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	I <sub>D</sub> =250μA, V <sub>GS</sub> =0 V	30			V
I <sub>DSS</sub>	Drain to Source Leakage Current	V <sub>DS</sub> = 24V, V <sub>GS</sub> =0V			1	μA
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> =20 V			100	nA
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250μA	1	1.7	3.0	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance <sup>2</sup>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =25A	-	2.1		mΩ
		V <sub>GS</sub> =10V, I <sub>D</sub> =30A		1.6	1.9	
<b>DYNAMIC PARAMETERS</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1MHz		7032		pF
C <sub>oss</sub>	Output Capacitance			898		pF
C <sub>rss</sub>	Reverse Transfer Capacitance			743		pF
<b>SWITCHING PARAMETERS</b>						
Q <sub>g</sub>	Total Gate Charge <sup>2</sup>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, I <sub>D</sub> =30A		80		nC
Q <sub>gs</sub>	Gate Source Charge			19		nC
Q <sub>gd</sub>	Gate Drain Charge			38		nC
t <sub>d(on)</sub>	Turn-On Delay Time	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>GEN</sub> =1Ω I <sub>D</sub> =1A		20		ns
t <sub>d(off)</sub>	Turn-Off Delay Time			80		ns
t <sub>d(r)</sub>	Turn-On Rise Time			36		ns
t <sub>d(f)</sub>	Turn-Off Fall Time			33		ns
<b>Thermal Resistance</b>						
Symbol	Parameter		Typ	Max		Units
R <sub>θJC</sub>	Junction to Case		-	2		°C/W
R <sub>θJA</sub>	Junction to Ambient (t ≤ 10s)		-	50		°C/W



Typical Characteristics

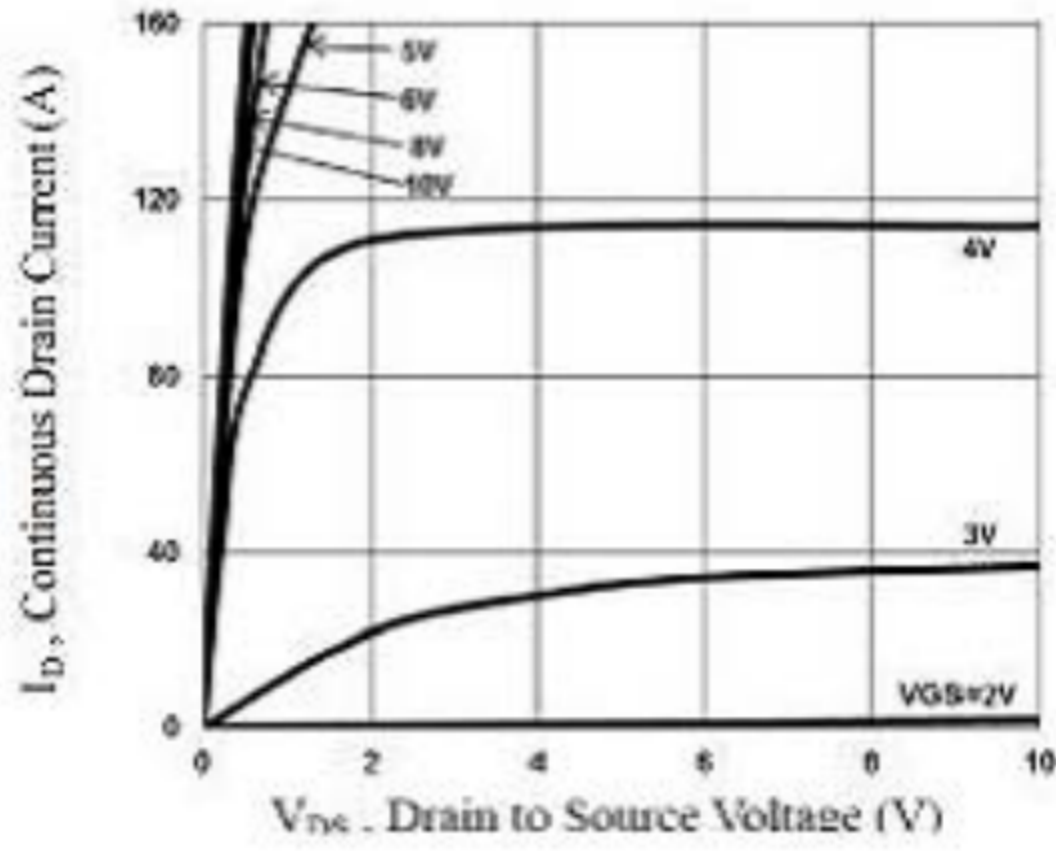


Figure 1: Typical Output Characteristics

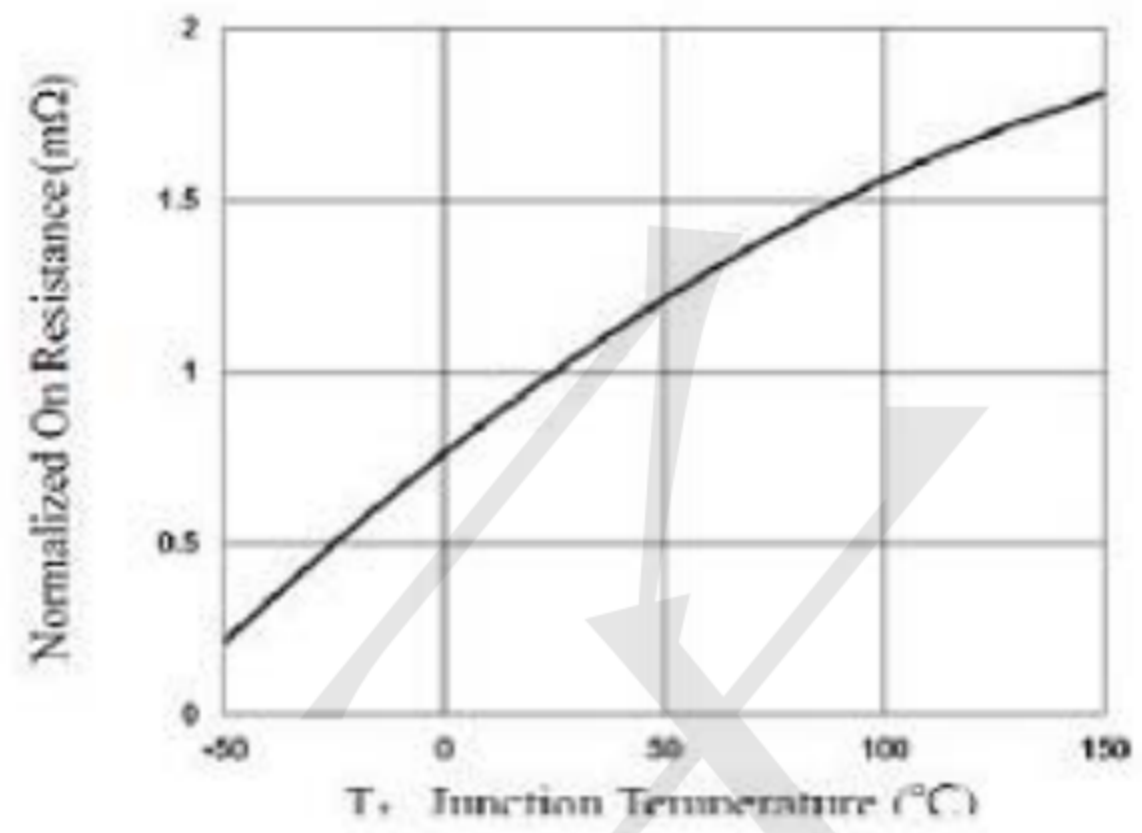


Figure 2: Normalized RDS(on) vs. TJ

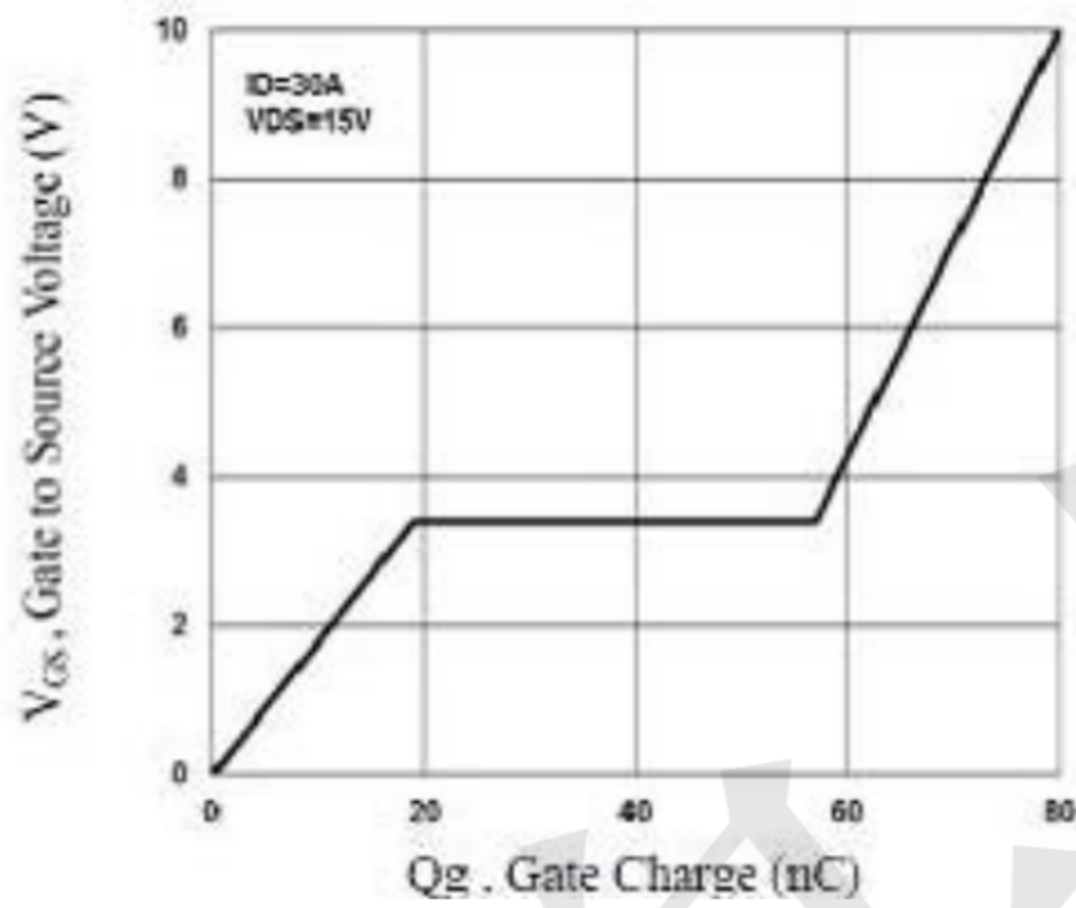


Figure 3: Gate-Charge Characteristics

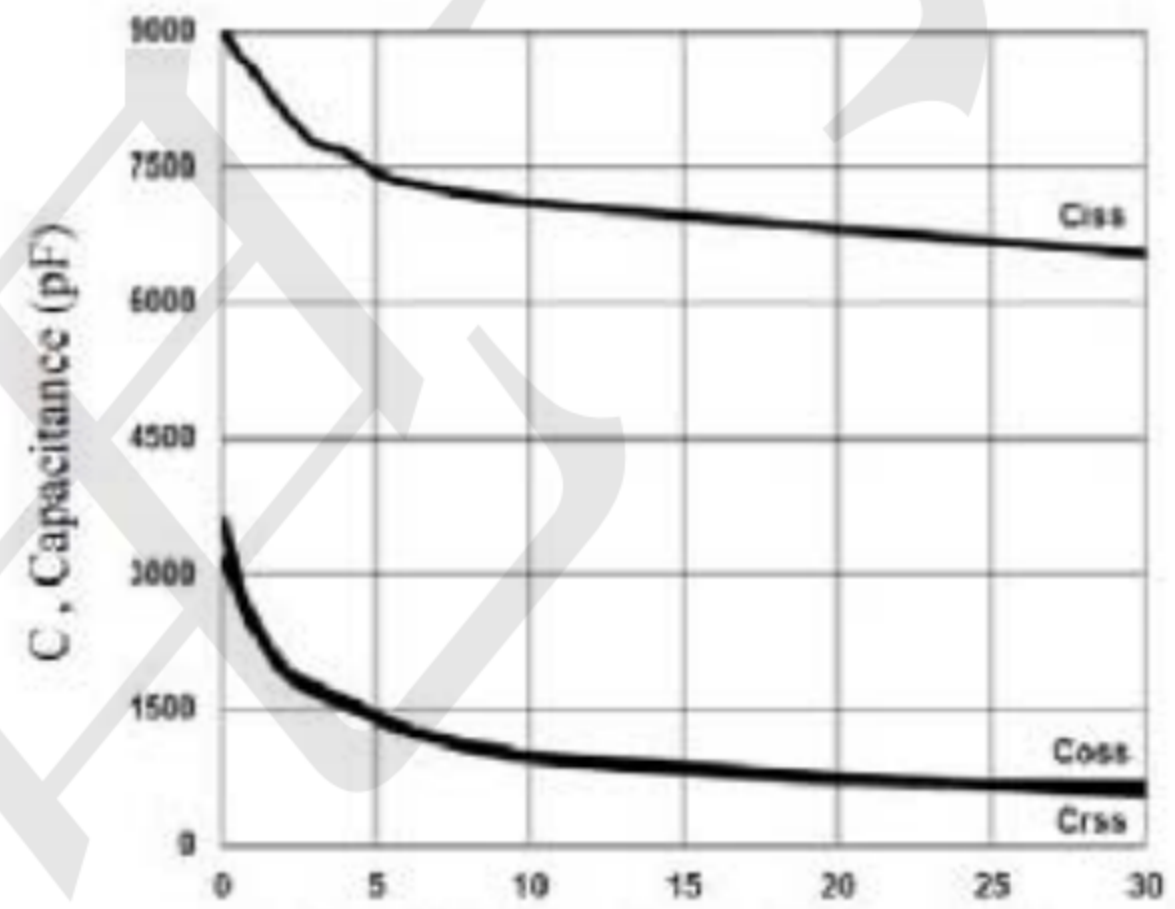


Figure 4: Capacitance Characteristics

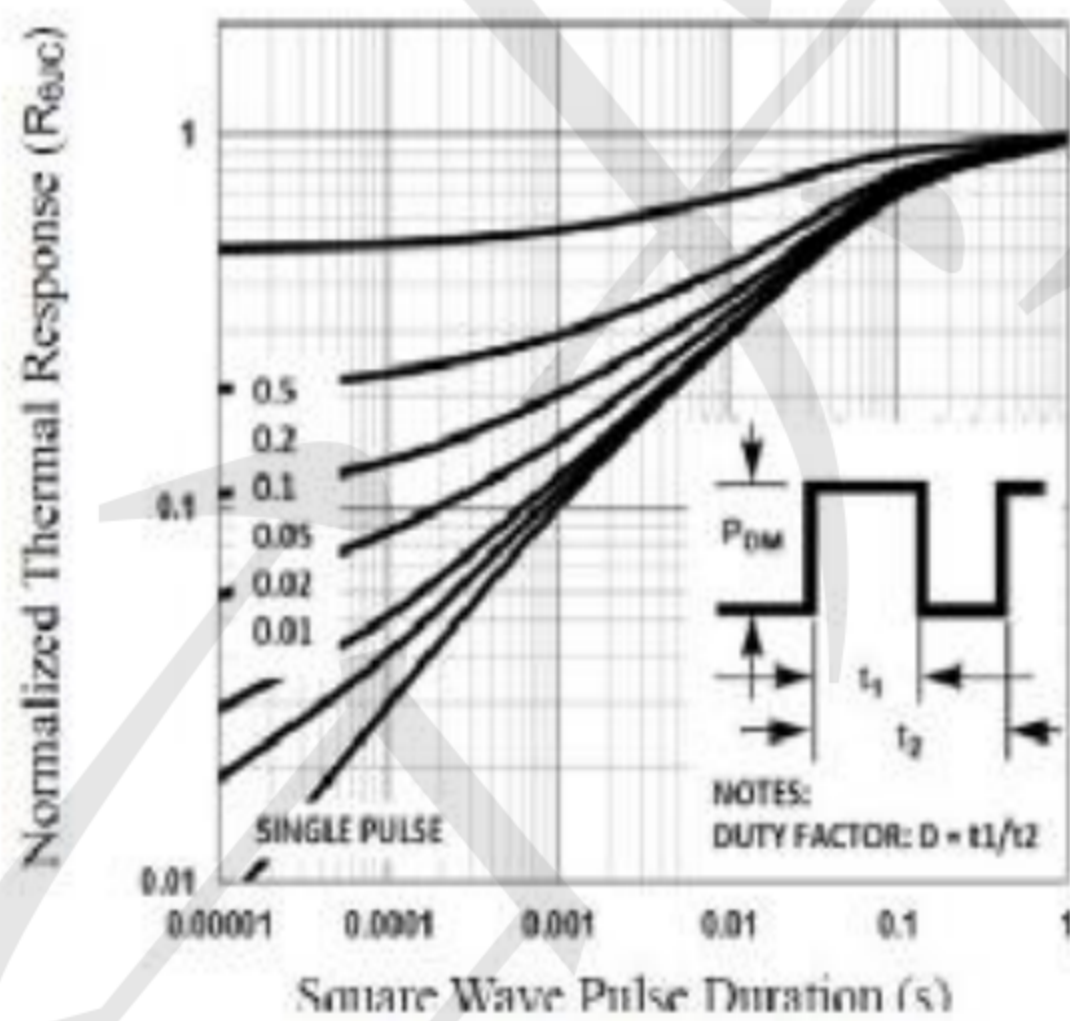


Figure 5: Normalized Thermal transient Impedance Curve

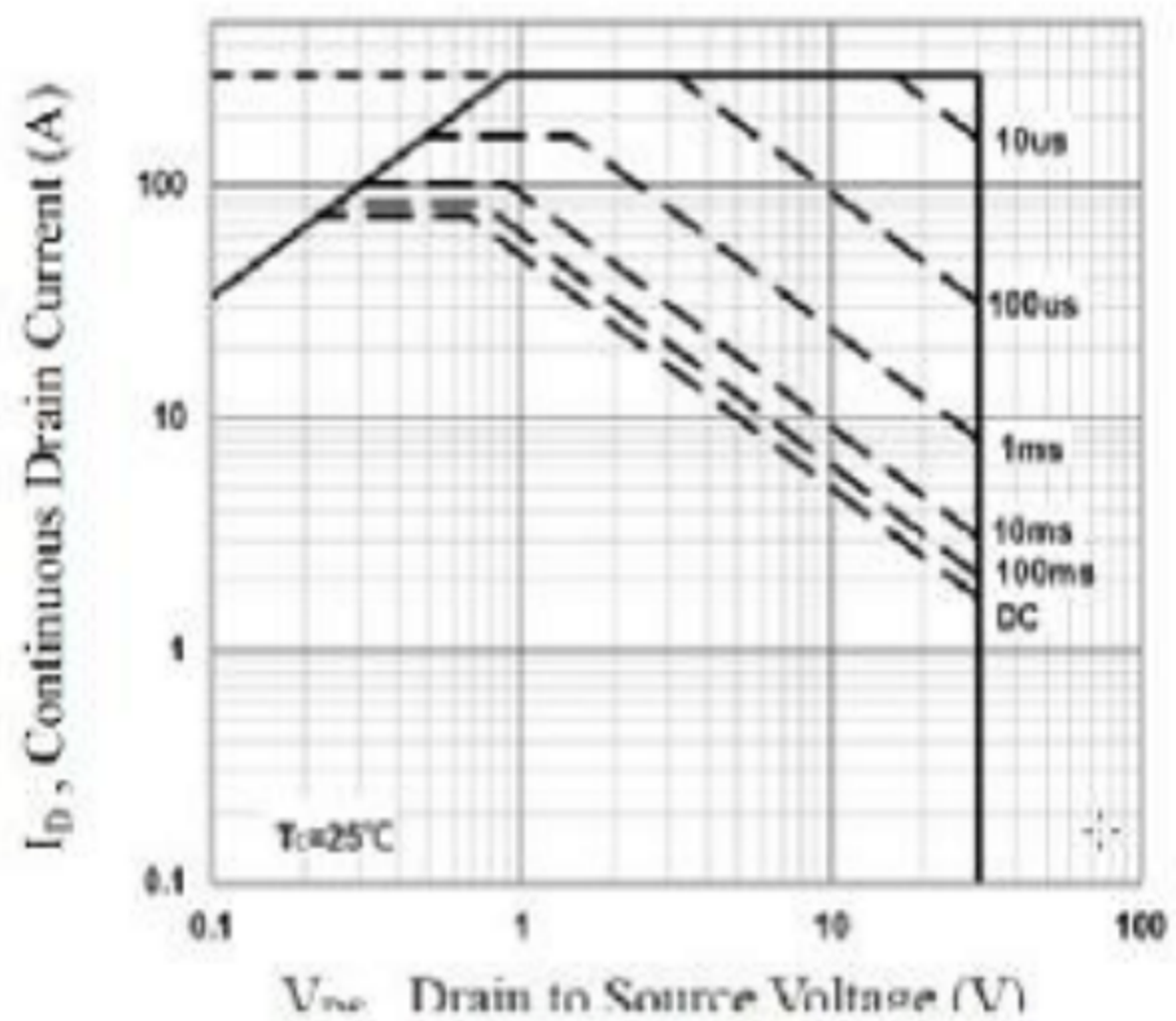
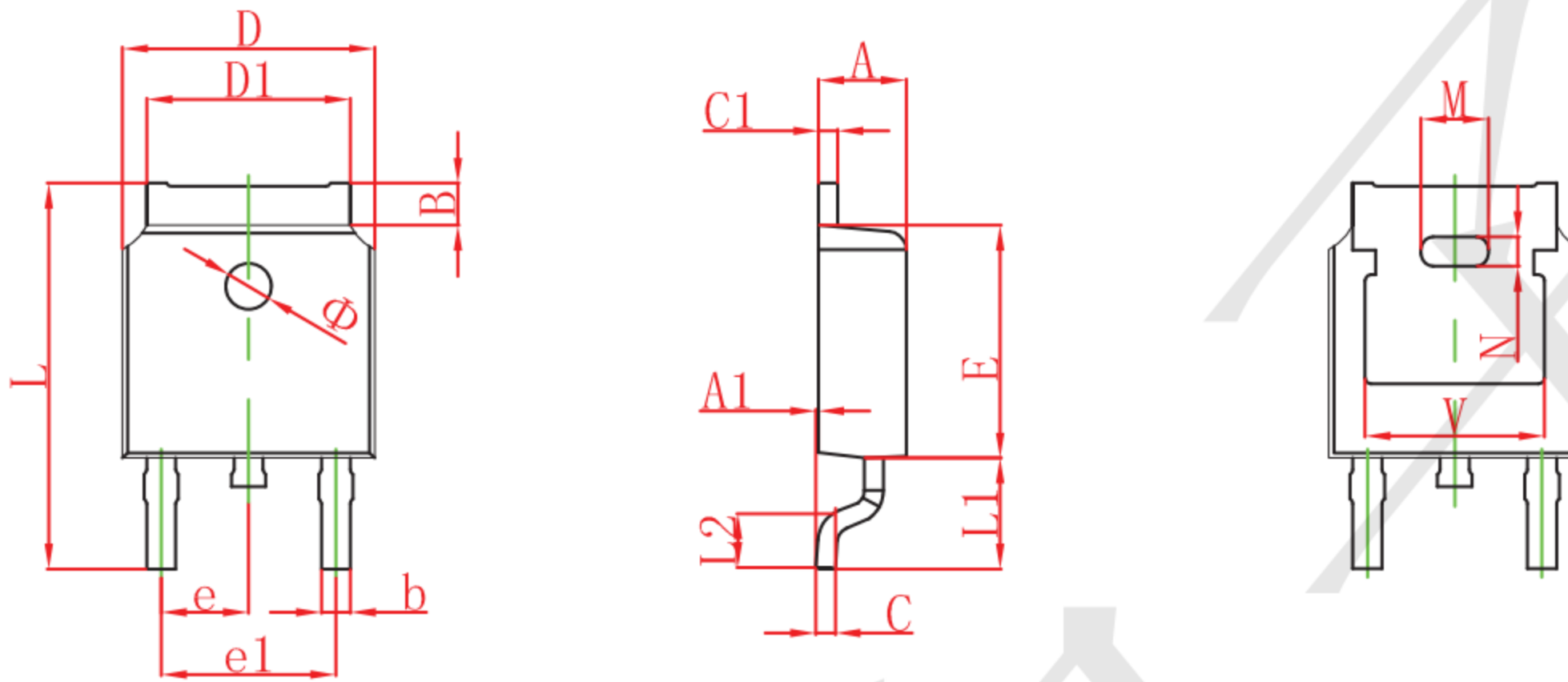


Figure 6: Maximum Safe Operation Area



**TO252 Package Information**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
B	0.800	1.400	0.031	0.055
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
c1	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
E	6.000	6.200	0.236	0.244
e	2.286 TYP.		0.090 TYP.	
e1	4.327	4.727	0.170	0.186
M	1.778REF.		0.070REF.	
N	0.762REF.		0.018REF.	
L	9.800	10.400	0.386	0.409
L1	2.9REF.		0.114REF.	
L2	1.400	1.700	0.055	0.067
V	4.830 REF.		0.190 REF.	
Φ	1.100	1.300	0.043	0.051