

### Features

- $R_{DS(ON)} \leq 100m\Omega @ V_{GS}=10V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current

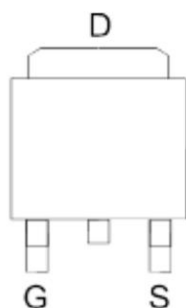
### Application

- Power Management in Note book
- DC/DC Converter
- Load Switch
- LCD Display inverter

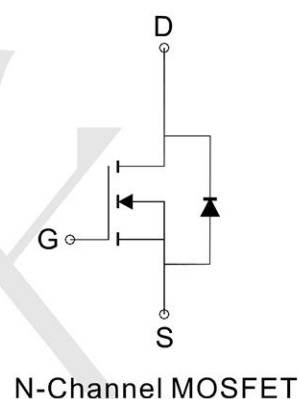
### Package and Pin Configuration

(TO-252-3L)

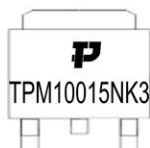
Top View



### Circuit diagram



### Marking:



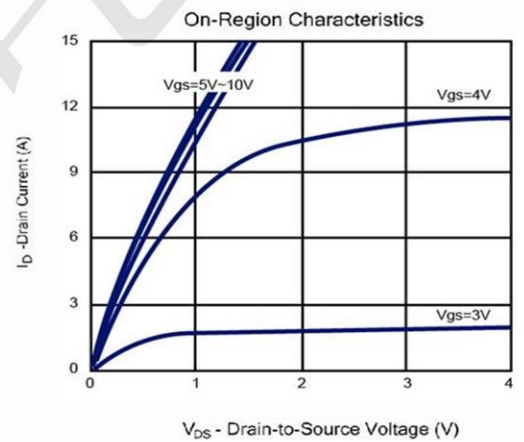
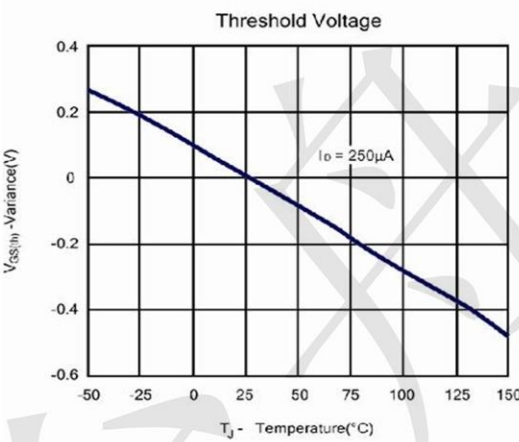
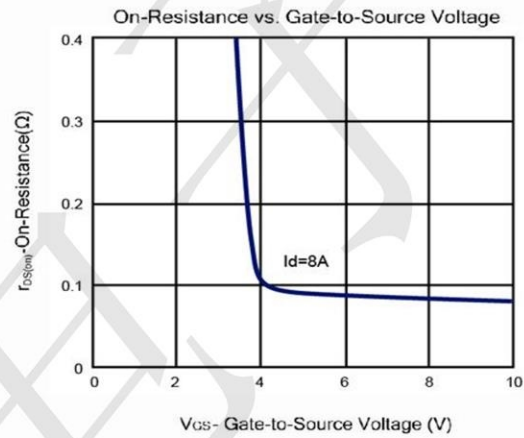
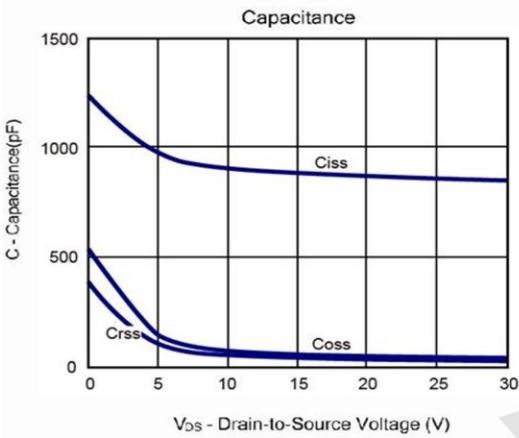
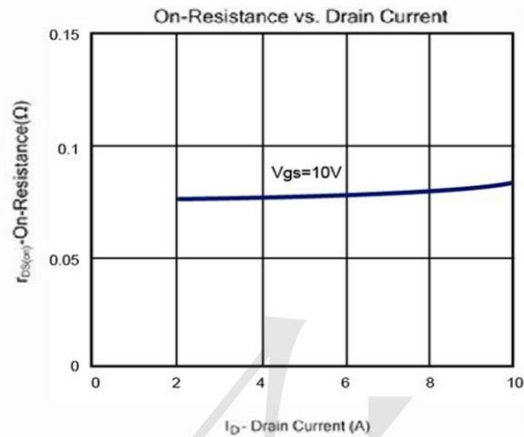
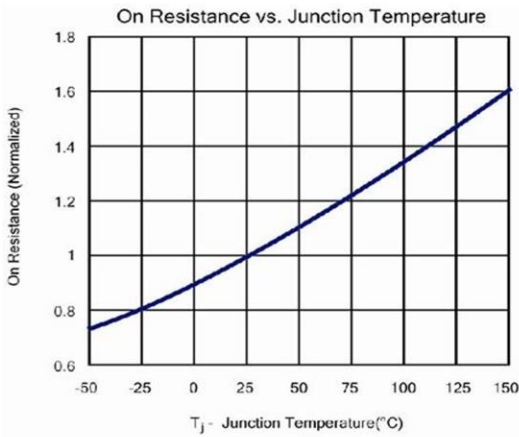
### Absolute Maximum Ratings (T<sub>c</sub>=25°C unless otherwise specified)

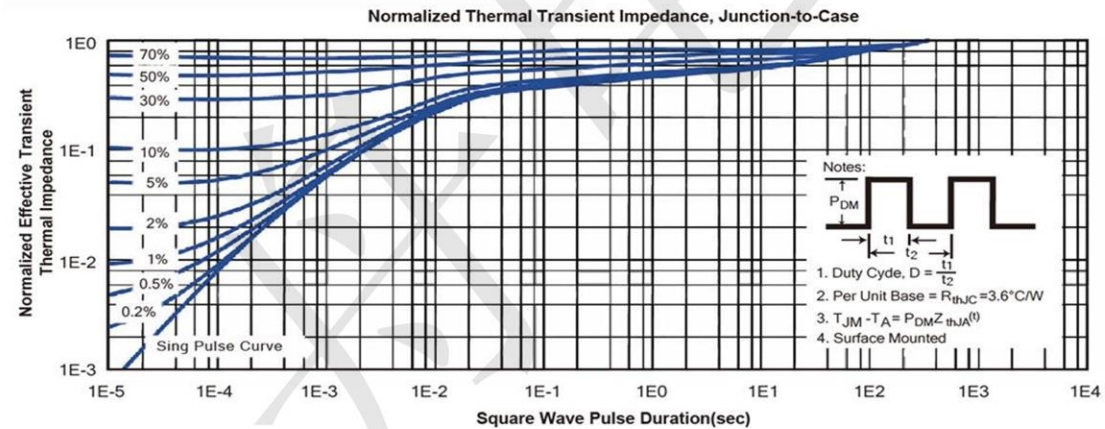
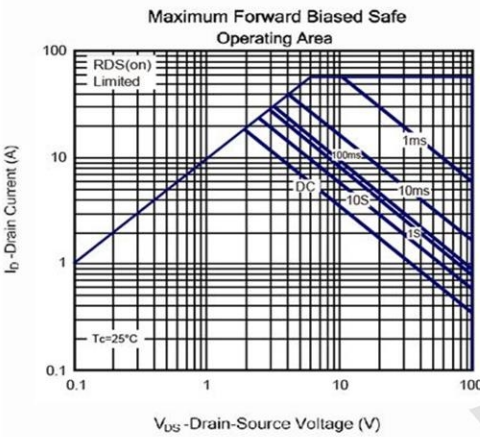
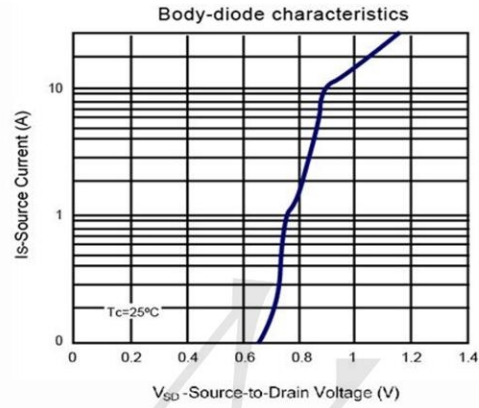
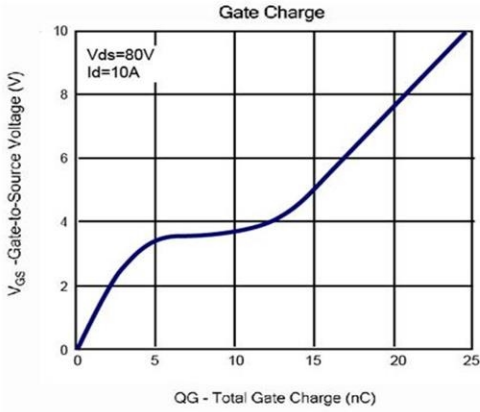
Parameter	Symbol	Maximum Ratings	Unit
Drain-Source Voltage	V <sub>DS</sub>	100	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current	I <sub>D</sub>	T <sub>c</sub> =25°C	14.7
		T <sub>c</sub> =70°C	13.6
Pulsed Drain Current	I <sub>DM</sub>	59	A
Maximum Power Dissipation	P <sub>D</sub>	T <sub>c</sub> =25°C	34.7
		T <sub>c</sub> =70°C	22.2
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C
Thermal Resistance-Junction to Case *	R <sub>θJC</sub>	3.6	°C/W

**Electrical Characteristics** ( $T_J=25^\circ\text{C}$  unless otherwise specified)

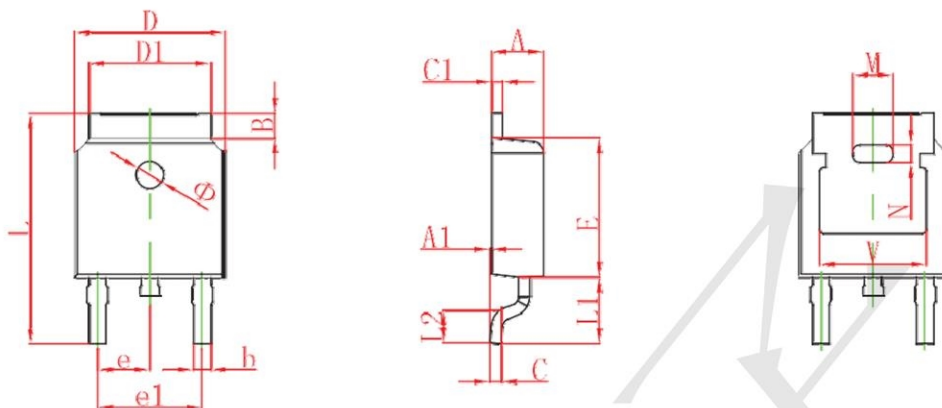
Symbol	Parameter	Limit	Min	Typ	Max	Unit
<b>STATIC</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250 $\mu$ A	100			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 $\mu$ A	1		3	V
I <sub>GSS</sub>	Gate Leakage Current	V <sub>DS</sub> =0V, V <sub>GS</sub> = $\pm$ 20V			$\pm$ 100	nA
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =80V, V <sub>GS</sub> =0V			1	$\mu$ A
R <sub>DS(on)</sub>	Drain-Source On-Resistance <sup>a</sup>	V <sub>GS</sub> =10V, I <sub>D</sub> =8A		80	100	m $\Omega$
V <sub>SD</sub>	Diode Forward Voltage	I <sub>S</sub> =8A, V <sub>GS</sub> =0V		0.9	1.2	V
<b>DYNAMIC</b>						
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =80V, V <sub>GS</sub> =10V, I <sub>D</sub> =10A		24		nC
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =80V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =10A		13		
Q <sub>gs</sub>	Gate-Source Charge			4.6		
Q <sub>gd</sub>	Gate-Drain Charge			7.6		
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz		882		pF
C <sub>oss</sub>	Output Capacitance			57		
C <sub>rss</sub>	Reverse Transfer Capacitance			44		
t <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DS</sub> =50V, R <sub>L</sub> =5 $\Omega$ , V <sub>GS</sub> =10V, R <sub>G</sub> =1 $\Omega$ I <sub>D</sub> =1A		14		ns
t <sub>r</sub>	Turn-On Rise Time			33		
t <sub>d(off)</sub>	Turn-Off Delay Time			39		
t <sub>f</sub>	Turn-Off Fall Time			5		

**Typical Electrical and Thermal Characteristic Curves**





**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.	
⌀	1.100	1.300	0.043	0.051

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