

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	2.5m Ω @10V	110A
	3.6m Ω @4.5V	

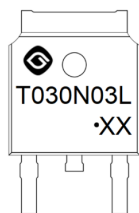
Feature

- Split Gate Trench Technology
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested
- 100% ΔV_{DS} Tested

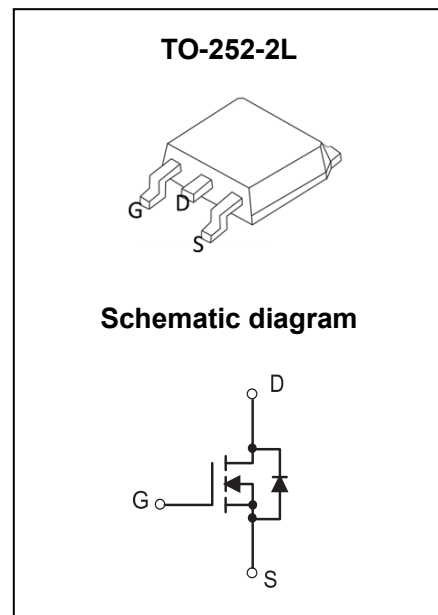
Application

- Power Switching Application

MARKING:



T030N03L = Device Code
 XX = Date Code
 Solid Dot = Green Indicator



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 ¹	I_D	110	A
Pulsed Drain Current ²	I_{DM}	440	A
Single Pulsed Avalanche Current ³	I_{AS}	33	A
Single Pulsed Avalanche Energy ³	E_{AS}	272	mJ
Power Dissipation ⁵	P_D	63	W
Thermal Resistance from Junction to Ambient ⁶	$R_{\theta JA}$	62	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	2	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

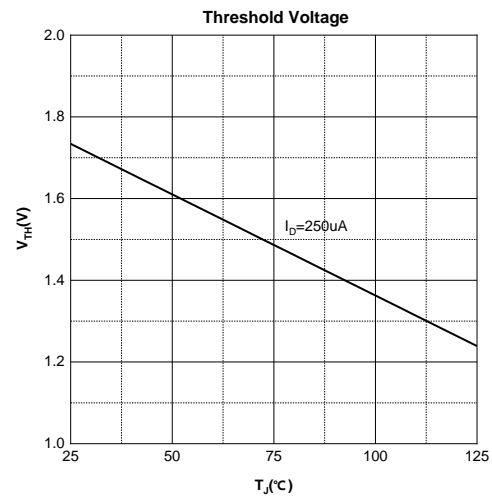
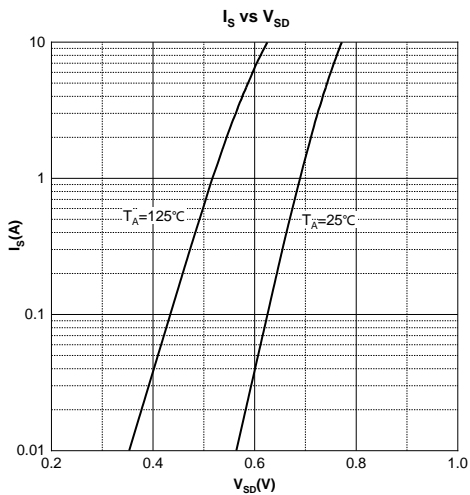
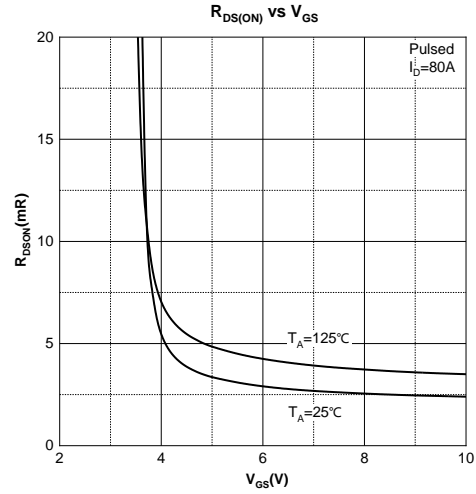
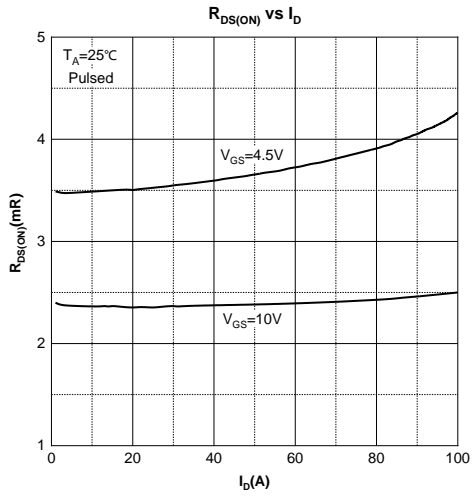
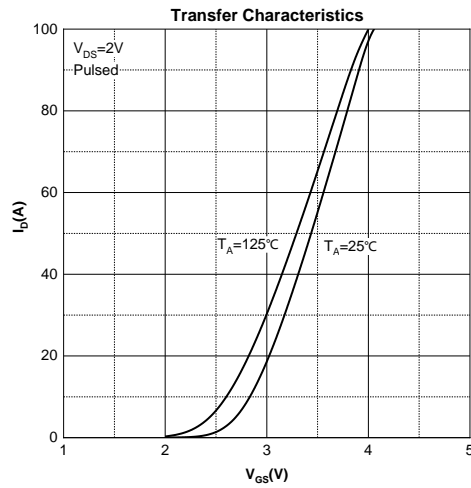
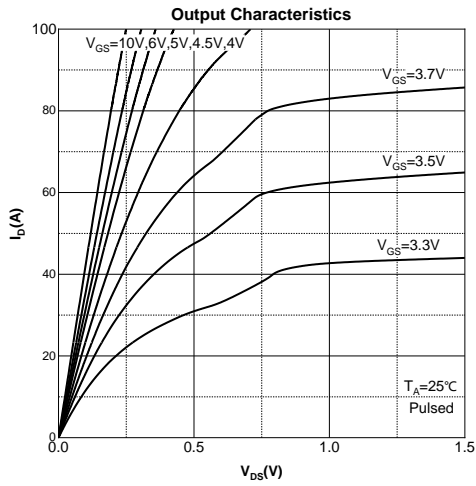
MOSFET ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

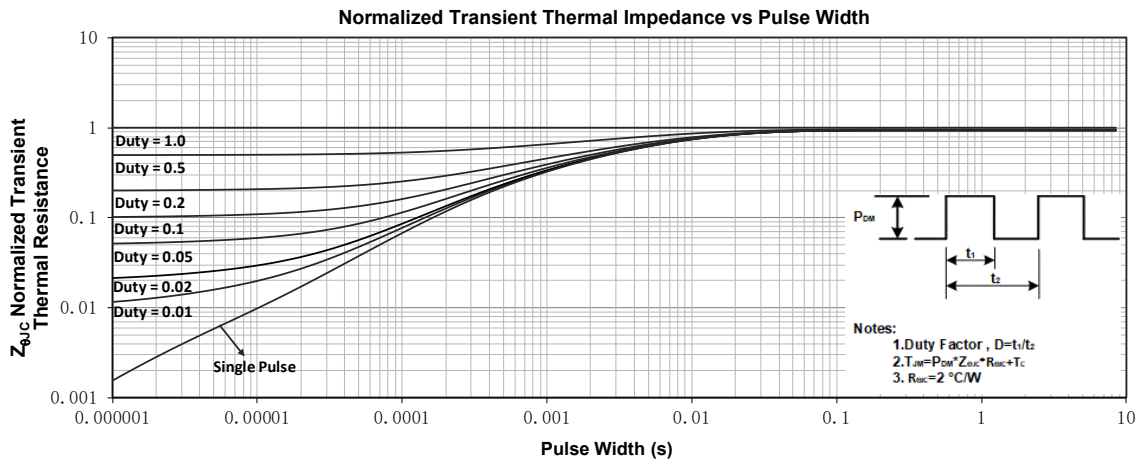
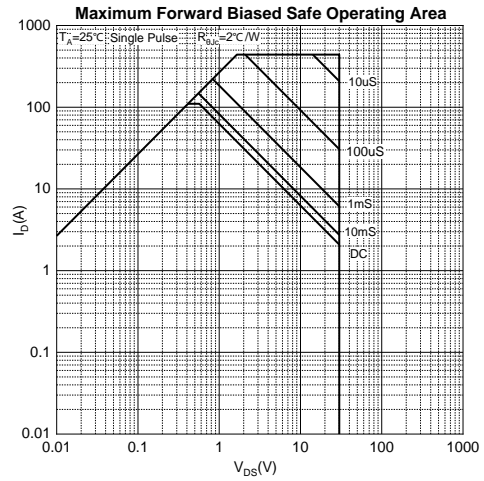
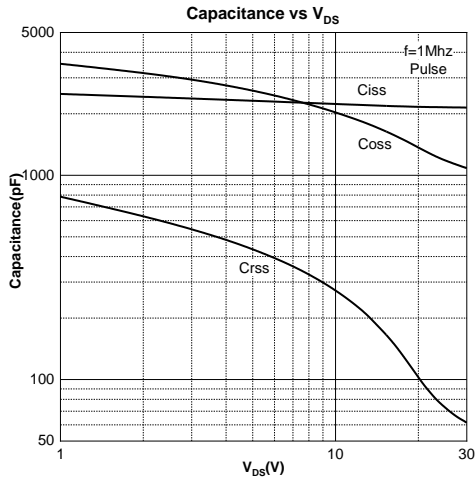
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics⁴						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.7	3	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$		2.5	3.3	m Ω
		$V_{GS} = 4.5V, I_D = 10A$		3.6	5.4	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		2158		pF
Output Capacitance	C_{oss}			1635		
Reverse Transfer Capacitance	C_{rss}			151		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		3.4		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 15V, V_{GS} = 10V, I_D = 10A$		38.4		nC
Gate-source Charge	Q_{gs}			5.9		
Gate-drain Charge	Q_{gd}			8.2		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 15V, V_{GS} = 10V, R_G = 3\Omega, I_D = 30A$		13		ns
Turn-on Rise Time	t_r			27		
Turn-off Delay Time	$t_{d(off)}$			62		
Turn-off Fall Time	t_f			53		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V_{SD}	$V_{GS} = 0V, I_S = 10A$			1.2	V

Notes :

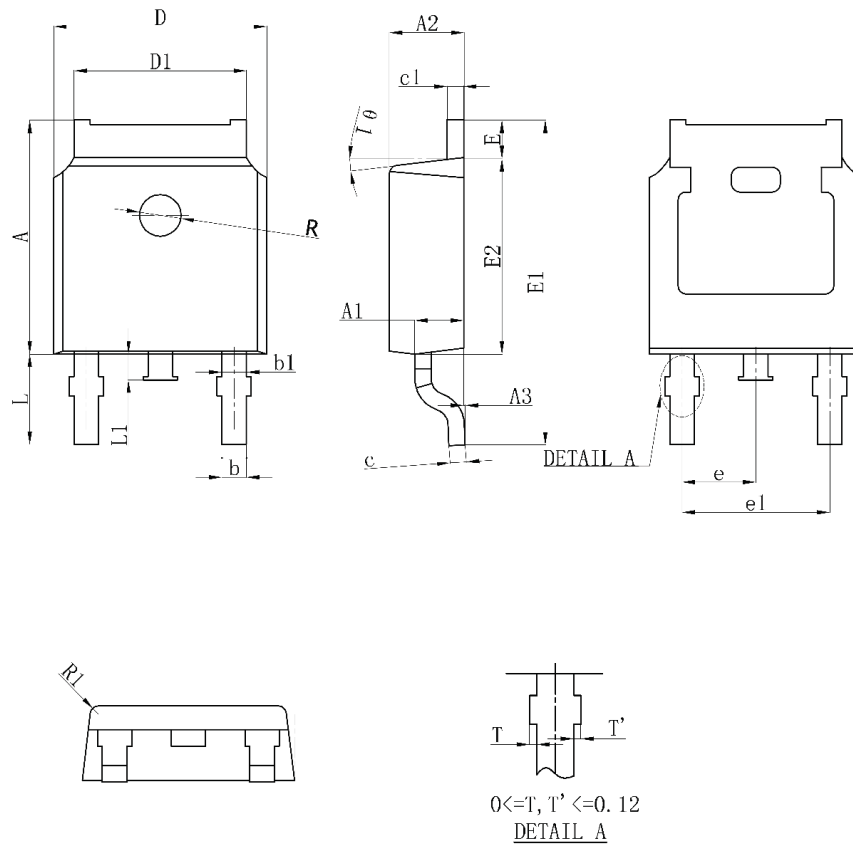
- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.EAS condition: $V_{DD} = 20V, V_{GS} = 10V, L = 0.5mH, R_G = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.
- 4.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 5.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.And device mounted on a large heatsink
- 6.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics





TO-252-2L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	6.850	7.250	0.269	0.285
A1	0.960	1.060	0.038	0.042
A2	2.200	2.400	0.087	0.094
A3	0.000	0.127	0.000	0.005
b	0.760REF		0.030REF	
b1	1.000REF		0.039REF	
c	0.508REF		0.020REF	
c1	0.508REF		0.020REF	
D	6.250	6.850	0.246	0.270
D1	5.050	5.650	0.199	0.222
E	0.850	1.050	0.033	0.041
E1	9.700	10.400	0.382	0.409
E2	5.800	6.400	0.228	0.252
e	2.286BSC		0.090BSC	
e1	4.572REF		0.180REF	
L	2.650	2.950	0.104	0.116
L1	0.600	0.900	0.024	0.035
θ1	7°REF		7°REF	
R	1.300REF		0.051REF	
R1	0.250REF		0.010REF	

Attention:

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
- Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.
- GreenPower Electronics products belong to consumer electronics or other civilian electronic products.