

Rev.C Apr.-2025

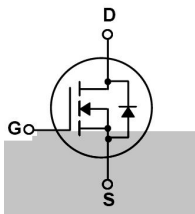
N TO-252

N-CHANNEL MOSFET in a TO-252 Plastic Package.

Low gate charge, low c_{rss} , fast switching, HF Product.

DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

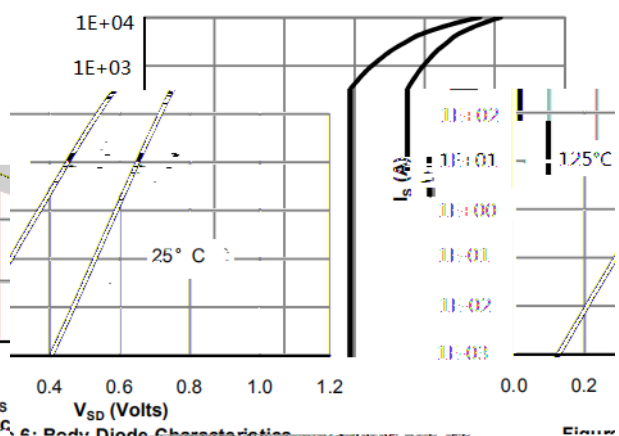
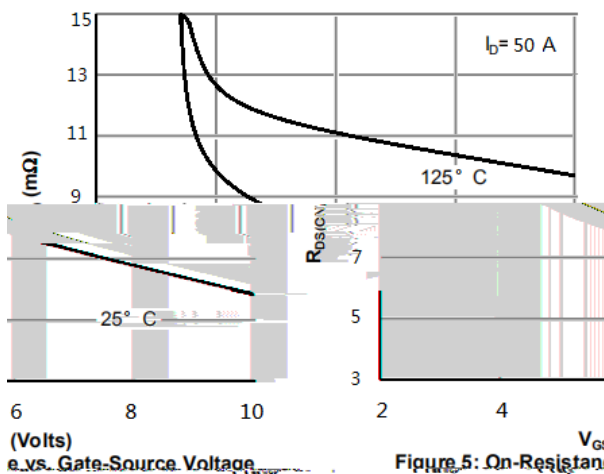
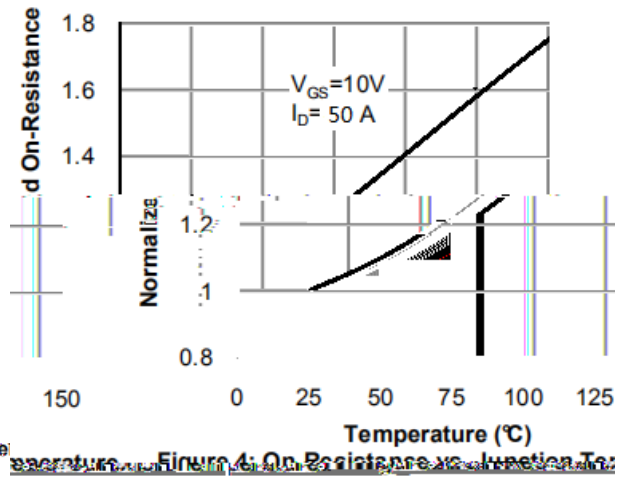
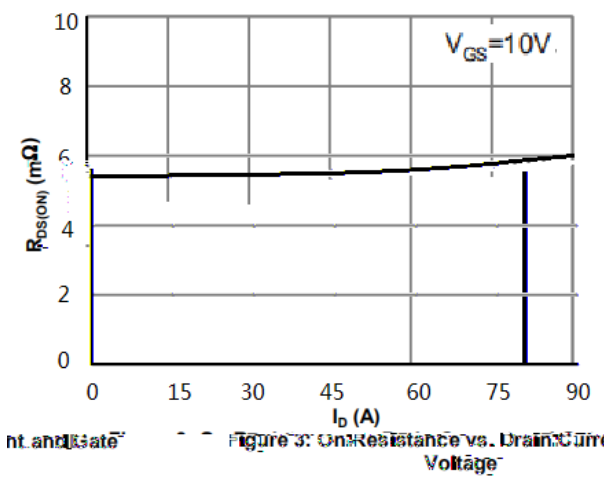
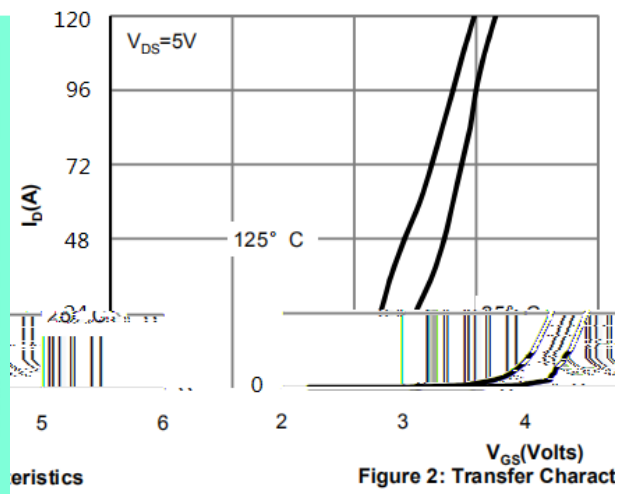
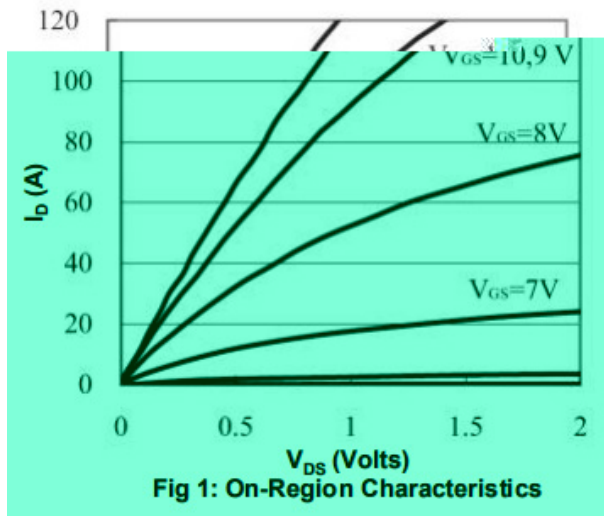


Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	100	A
Peak Drain Current	I_{DM}	380	A
Gate-Source Voltage	V_{GS}	± 20	V
Single Pulsed Avalanche Energy	E_{AS}	602	mJ
Avalanche Current	I_{AS}	38.9	A
Total Power Dissipation	$P_D(T_c=25^\circ\text{C})$	60	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Thermal Resistance-Junction to Case	R_{JC}	2.1	/W
Thermal Resistance-Junction to Ambient	R_{JA}	62.5	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\text{ A}$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$ $V_{GS}=0V$			1	A
		$V_{DS}=60V$ $V_{GS}=0V$ $T_J=125^\circ\text{C}$			10	A
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ A}$	2	2.6	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=50A$		5.9	7	m

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Diode Forward Voltage	V_{SD}	$I_S=1A$ $V_{GS}=0V$		0.6	1.2	V
Input Capacitance	C_{iss}	$V_{GS}=0V$ $V_{DS}=25V$, $f=1.0MHz$		4920		pF
Output Capacitance	C_{oss}			295		
Reverse Transfer Capacitance	C_{rss}			133		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$, $f=1MHz$		1.2		
Total Gate Charge	$Q_g(10V)$	$V_{GS}=10V$ $V_{DS}=30V$ $I_D=50A$		53	75	nC
Total Gate Charge	$Q_g(4.5V)$			22	31	
Gate Source Charge	Q_{gs}			17		
Gate Drain Charge	Q_{gd}			5		
Turn-On DelayTime	$t_{D(on)}$	$V_{DD}=30V$ $I_D=50A$ $V_{GS}=10V$ $R_G=2.5$		18		ns
Turn-On Rise Time	t_r			20		
Turn-Off DelayTime	$t_{D(off)}$			33		
Turn-Off Fall Time	t_f			4		

A. The value of R_{qJA} is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^{\circ}C$. The Power dissipation PDSM is based on R_{qJA} and the maximum



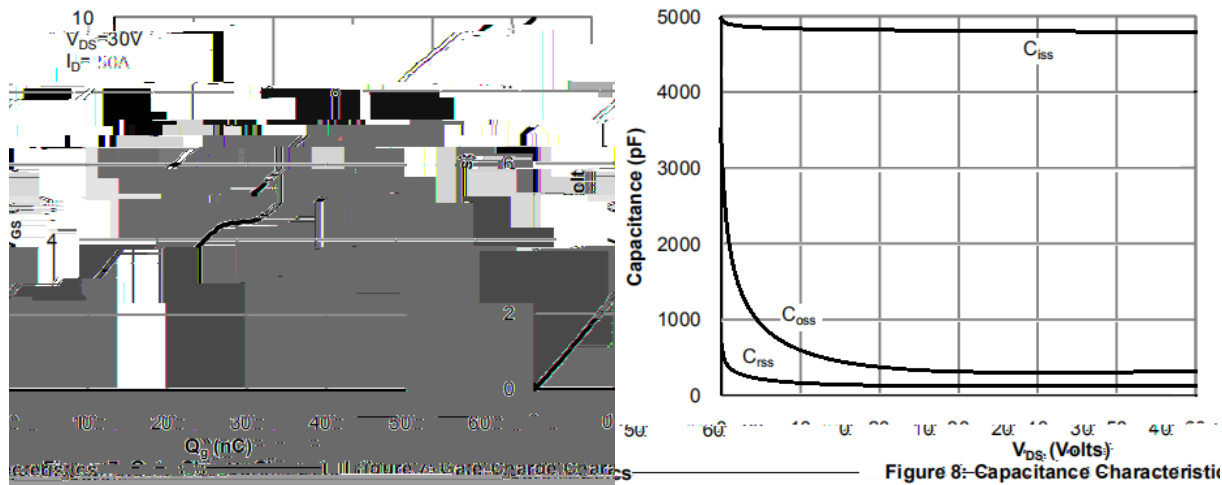


Figure 8: Capacitance Characteristic

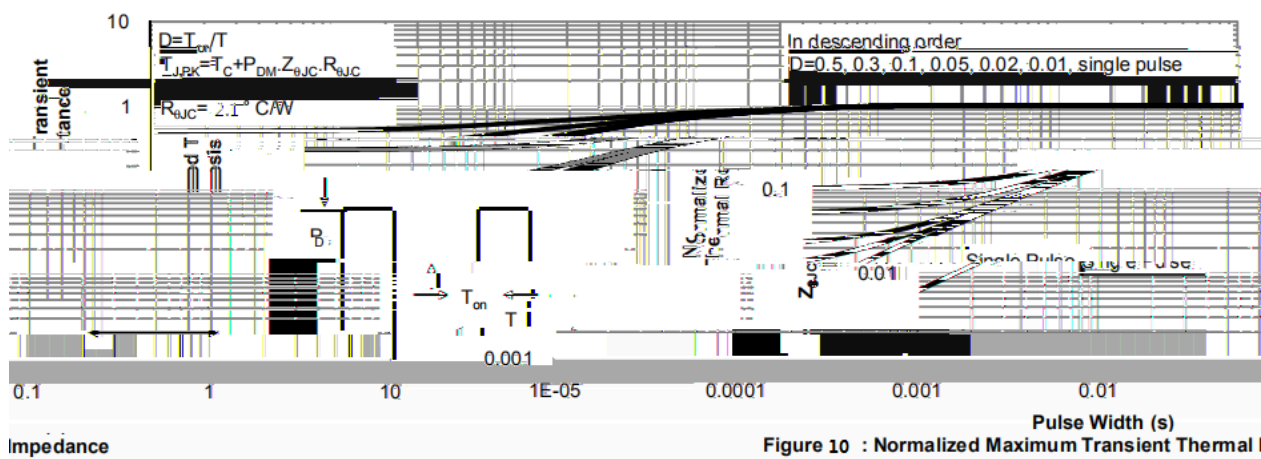
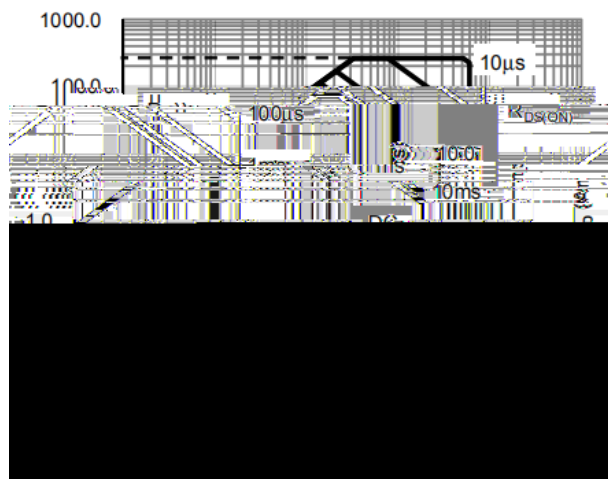
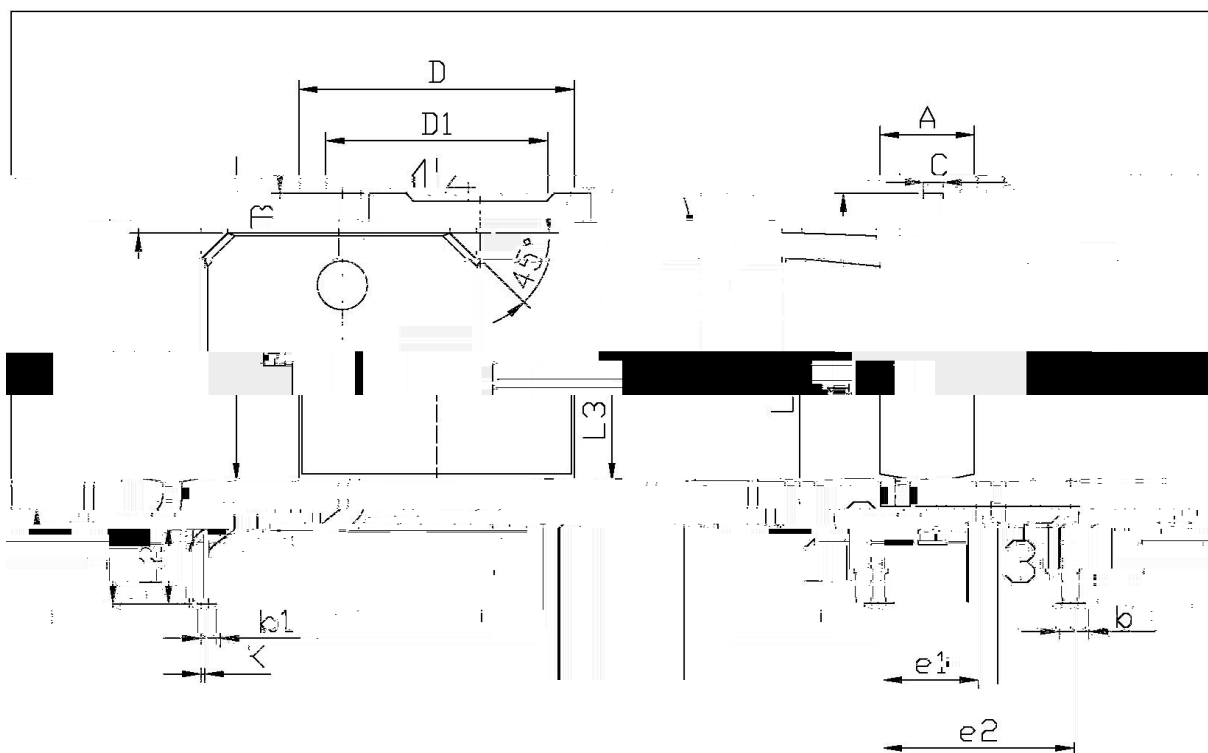


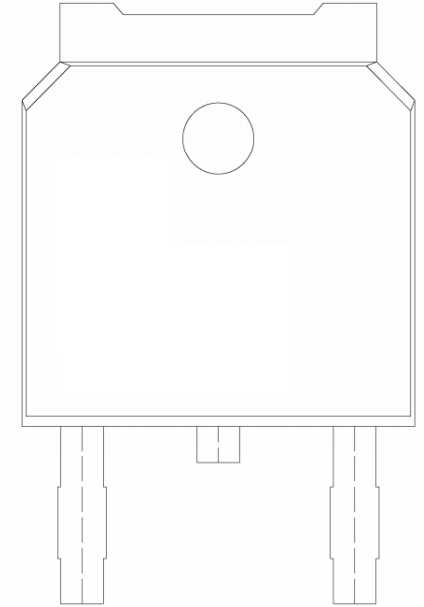
Figure 10 : Normalized Maximum Transient Thermal



单位: mm

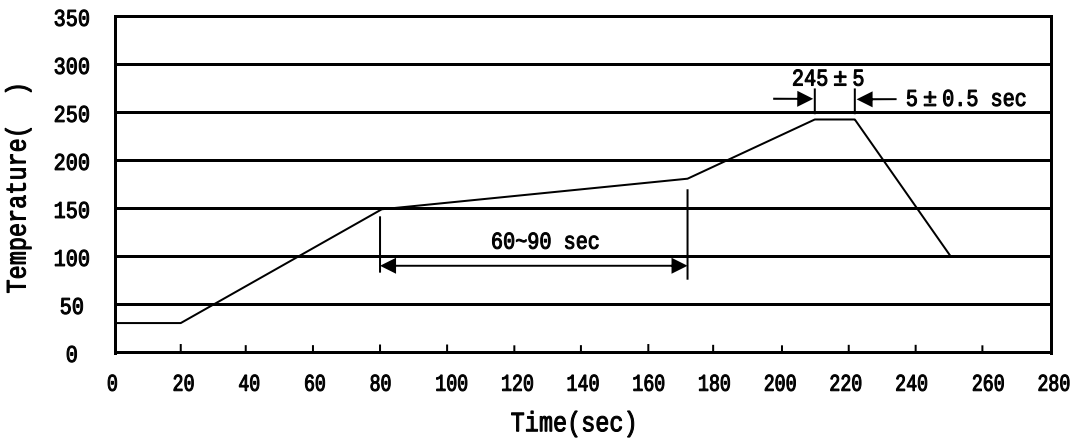
Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
E	5.95	6.25	A	2.20	2.40
e1	2.24	2.34	B	0.95	1.25
e2	4.10	4.73	b	0.70	0.90
L1	9.85	10.35	b1	0.45	0.55
α	0.90	1.15	L2	1.70	2.00
D	6.45	6.75	D1	5.10	5.50
D1	5.10	5.50	K		

T0-252



BRM

Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1

150 180

60 90sec;

1.Preheating:150~180 , Time:60~90sec.
- 2

245±5

5±0.5sec;

2.Peak Temp.:245±5 , Duration:5±0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 /sec.

260±5

10±1 sec.

Temp.:260±5

Time:10±1 sec

/ REEL

Package Type	Units					Dimension (unit mm ³)		
TO-252	2,500	2	5,000	6	30,000	13 ×16	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180