

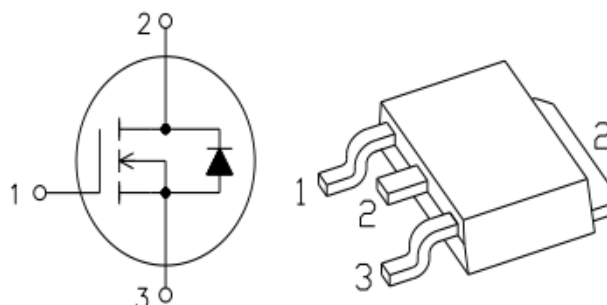
TO-252 Plastic-Encapsulate MOSFETS

FEATURE

- High Current Rating
- Lower RDS(on)
- Lower Capacitance
- Lower Total Gate Charge
- Tighter VSD Specifications
- Avalanche Energy Specified
- N-Channel Power MOSFET

MECHANICAL DATA

- Case style:TO-252 molded plastic
- Mounting position:any



1.Gate 2.Drain 3.Source

MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	800	V
Gate-Source Voltage	V_{GS}	± 30	
Continuous Drain Current	I_D	4.0	A
Pulsed Drain Current	I_{DM}	16	
Single Pulsed Avalanche Energy (note1)	E_{AS}	125	mJ
Power Dissipation	P_D	35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	°C/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	3.57	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	°C
Maximum lead temperature for soldering purposes , 1/8" from case for 5 seconds	T_L	260	°C

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	800			V
Drain-source diode forward voltage(note2)	V _{SD}	V _{GS} = 0V, I _s =4.0A			1.5	
Zero gate voltage drain current	I _{DSS}	V _{DS} =800V, V _{GS} =0V			1	μA
Gate-body leakage current (note2)	I _{GSS}	V _{DS} =0V, V _{GS} =±30V			±100	nA
On characteristics (note2)						
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.0	3.2	4.0	V
Static drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =2.0A		3.4	3.8	Ω
Dynamic characteristics (note 3)						
Input capacitance	C _{iss}	V _{DS} =25V,V _{GS} =0V,f =1MHz		4 9 6		pF
Output capacitance	C _{oss}			4 8 . 5		
Reverse transfer capacitance	C _{rss}			1.2		
Switching characteristics (note 3)						
Total gate charge	Q _g	V _{DS} =300V,V _{GS} =10V,I _D =4.0A		23.5		nC
Gate-source charge	Q _{gs}			5.3		
Gate-drain charge	Q _{gd}			10.1		
Turn-on delay time (note3)	t _{d(on)}	V _{DD} =300V, V _{GS} =10V, R _G =4.7Ω, I _D =4.0A		10.5		ns
Turn-on rise time (note3)	t _r			7.5		
Turn-off delay time (note3)	t _{d(off)}			35		
Turn-off fall time (note3)	t _f			9.5		

Notes :

1. $L=30mH, I_L=4A, V_{DD}=100V, R_G=25\Omega$, Starting $T_J=25^\circ\text{C}$.
2. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
3. These parameters have no way to verify.

Rating and Characteristic Curves

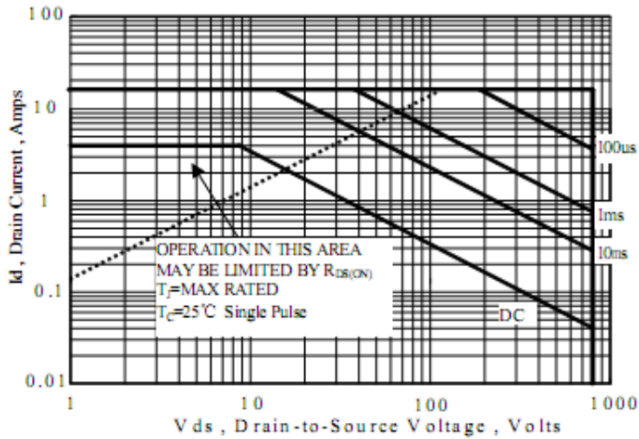


Figure 1 Maximum Forward Bias Safe Operating Area

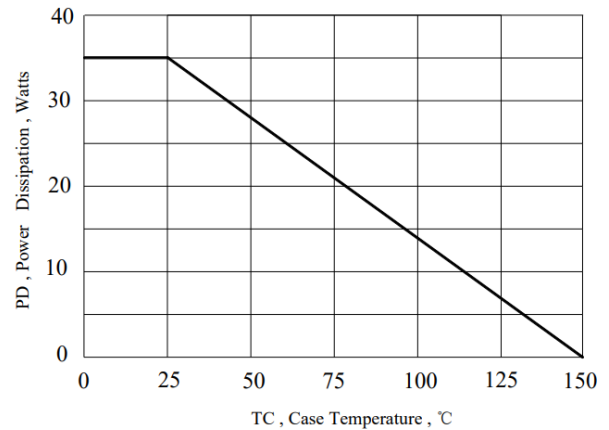


Figure 2, Maximum Power Dissipation vs Case Temperature

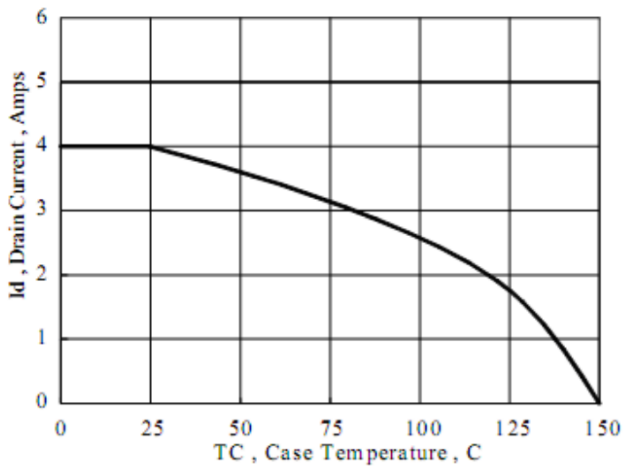


Figure 3 Maximum Continuous Drain Current vs Case Temperature

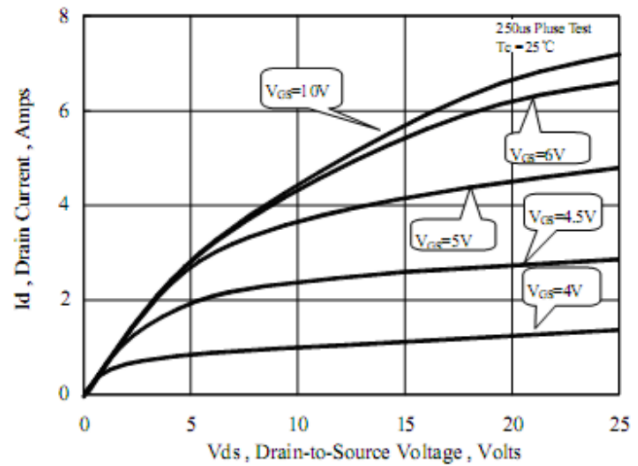


Figure 4 Typical Output Characteristics

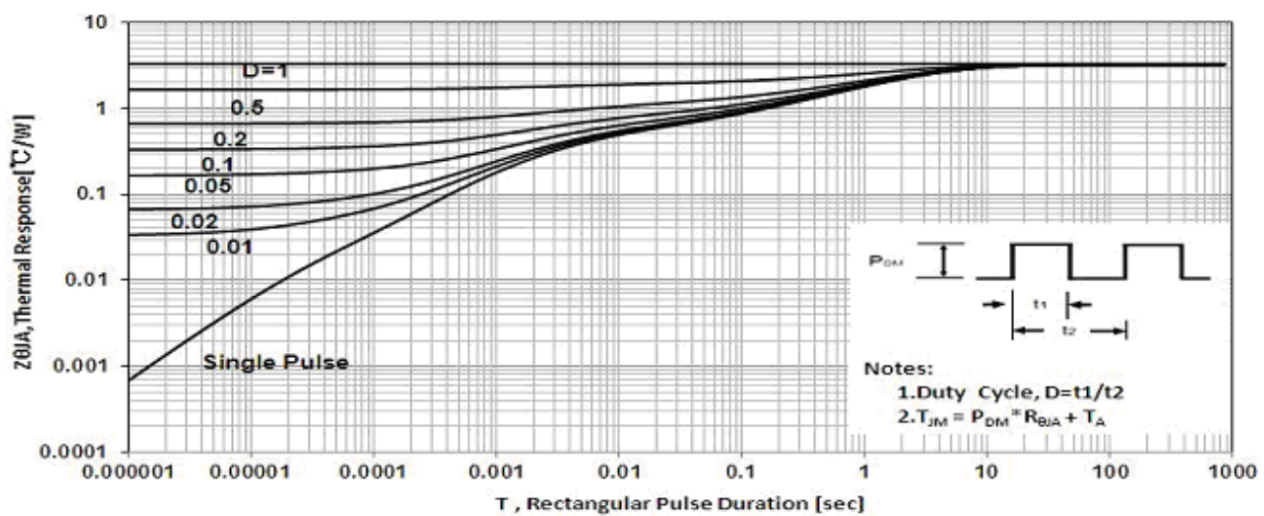


Figure 5 Maximum Effective Thermal Impedance, Junction to Case

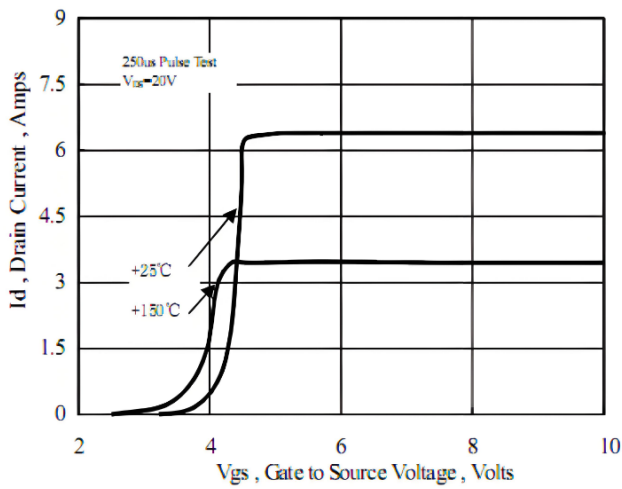


Figure 6 Typical Transfer Characteristics

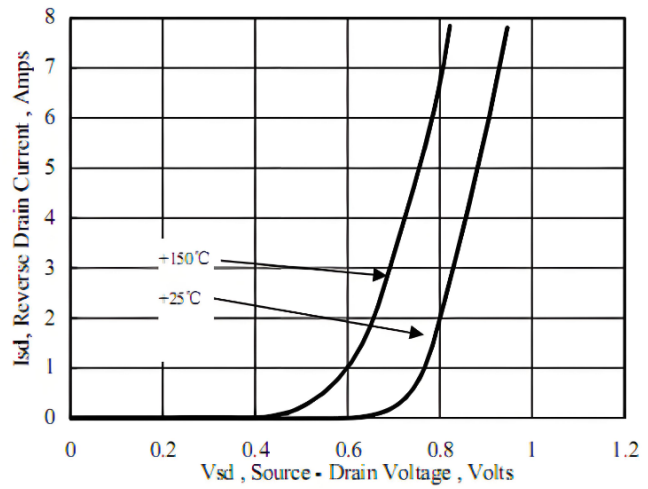


Figure 7 Typical Body Diode Transfer Characteristics

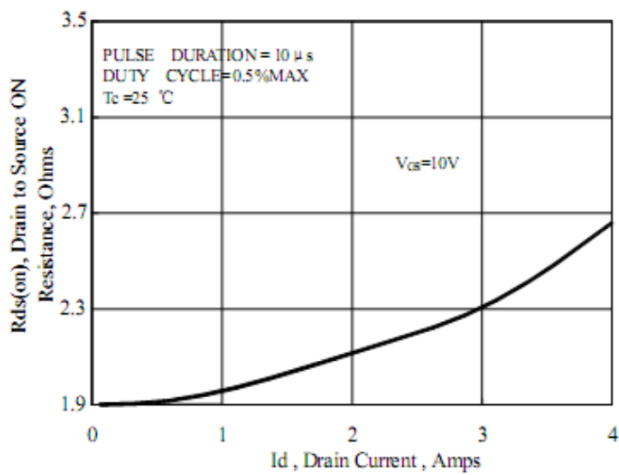


Figure 8 Typical Drain to Source ON Resistance vs Drain Current

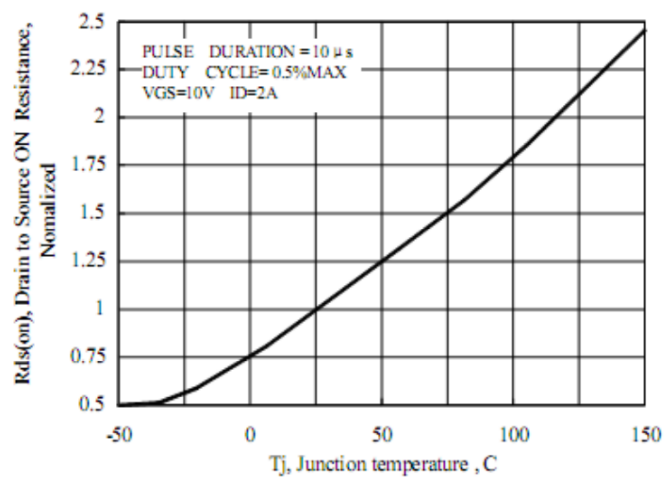


Figure 9 Typical Drain to Source on Resistance vs Junction Temperature

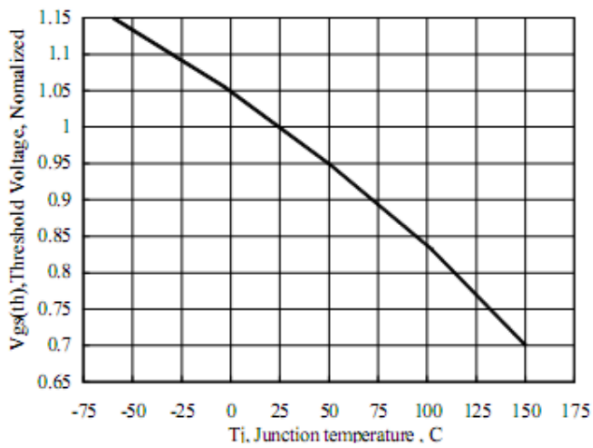


Figure 10 Typical Threshold Voltage vs Junction Temperature

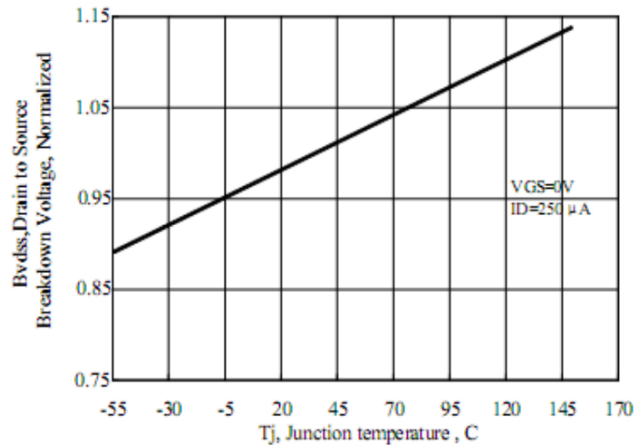


Figure 11 Typical Breakdown Voltage vs Junction Temperature

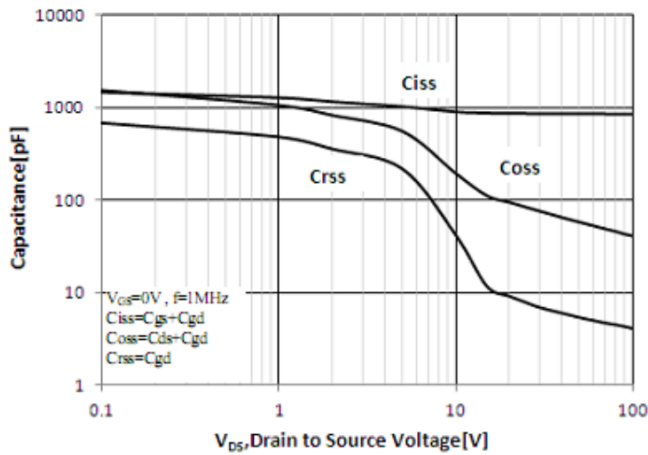


Figure 12 Typical Capacitance vs Drain to Source Voltage

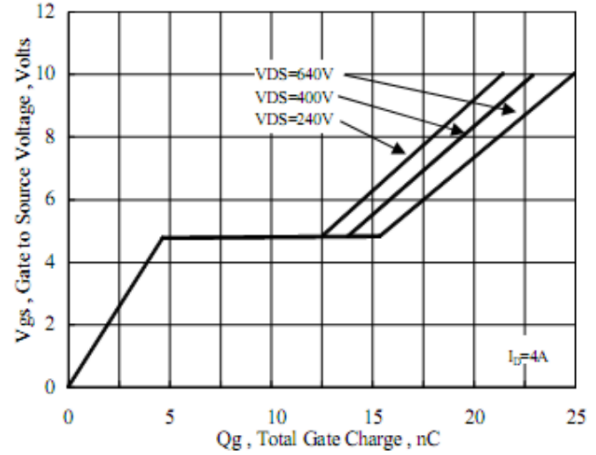
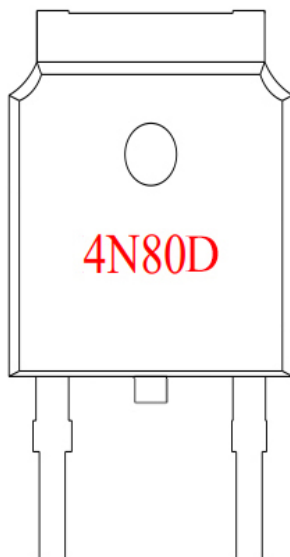


Figure 13 Typical Gate Charge vs Gate to Source Voltage

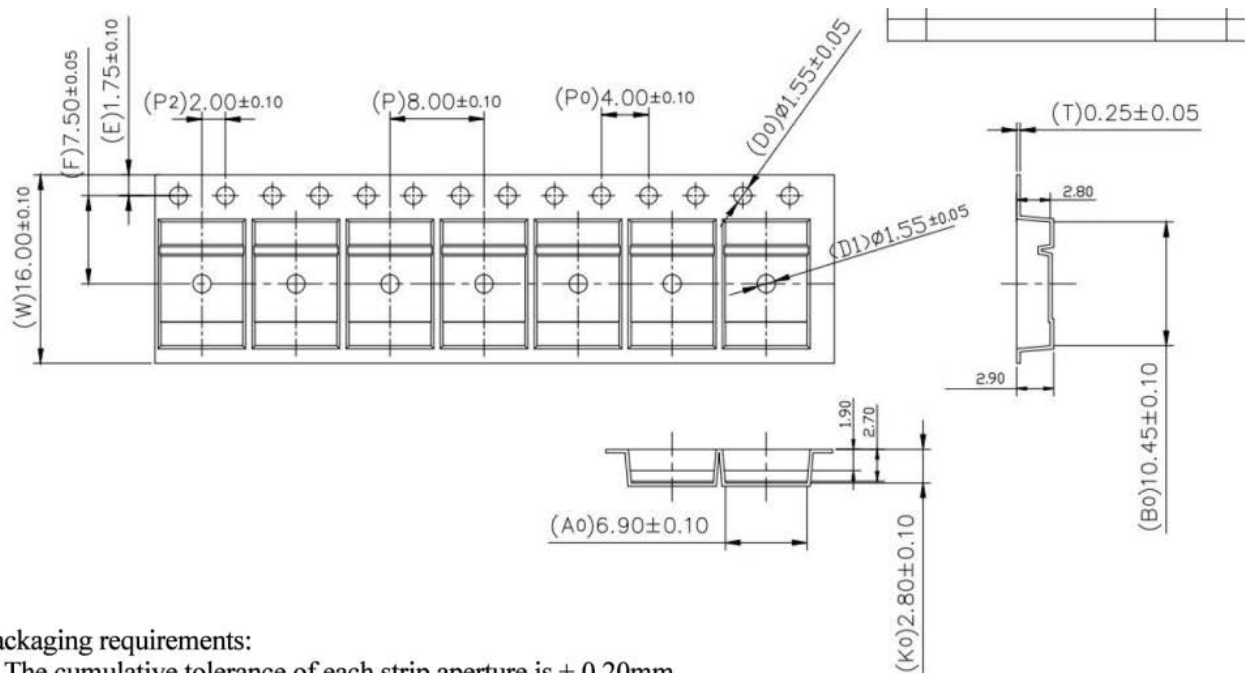
Marking



Technical drawing of a mechanical part. The part consists of a main rectangular body with a width of 6.25 and a height of 6.70. The main body is shaded with diagonal lines. Below the main body, there are two smaller rectangular features, each with a width of 4.57 and a height of 2.80. The total height of the part, including the main body and the two smaller features, is 11.35.

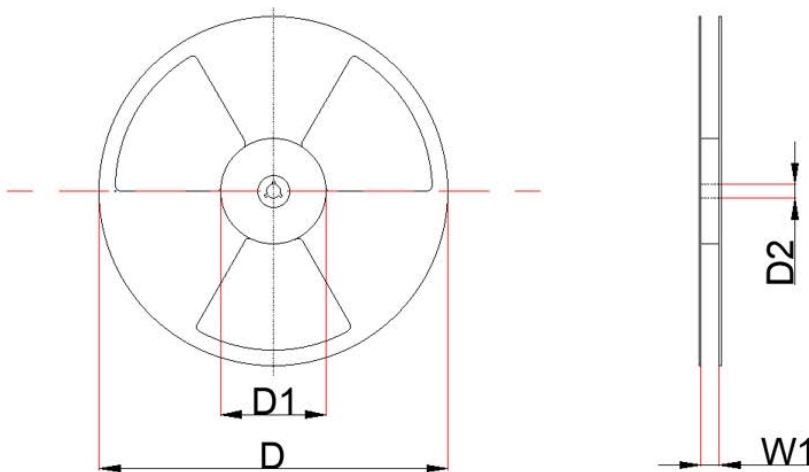
1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.1 mm.
3. The pad layout is for reference purposes only.

Packing Information



Packaging requirements:

1. The cumulative tolerance of each strip aperture is $\pm 0.20\text{mm}$.
2. The bending of the material strip should not exceed 1mm per 100mm.



Symbol [↵]	Value (mm) [↵]
D [↵]	330 [↵]
D1 [↵]	100 [↵]
D2 [↵]	13 [↵]
W1 [↵]	17 [↵]

Package	Reel Size	Reel DIA. (mm)	QTY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	QTY/Carton (Kpcs)
TO-252	13'	330	2.5	340	5.0	360*360*360	40