

Descriptions

This 18A,200V N-Channel MOSFET in a TO-252 Plastic Package.

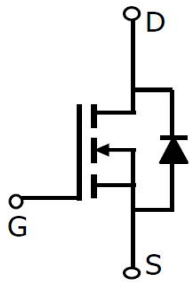
Features

- $V_{DS}=200V$; $I_D=18A$; $V_{GS}=\pm 20V$
- $R_{DS(on)}@10V \leq 170m\Omega$ (Type. 130m Ω)
- $R_{DS(on)}@4.5V \leq 200m\Omega$ (Type. 150m Ω)
- Halogen-free Product

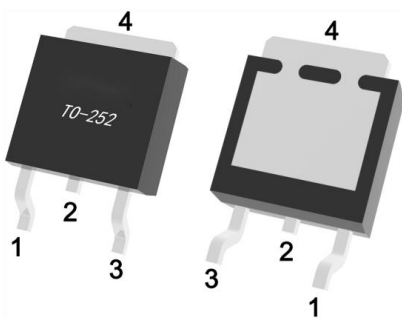
Applications

- Networking
- Load Switch
- LED applications

Equivalent Circuit



Pinning



PIN1: G PIN 2、4: D PIN 3: S

Marking

See Marking Instructions.

Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DSS}	200	V
Drain Current		I _D (T _c =25°C)	18	A
Drain Current - Pulsed		I _{DM}	43	A
Gate-Source Voltage		V _{GS}	±20	V
Single Pulsed Avalanche Energy(L=10mH)		E _{AS}	125	mJ
Avalanche Current(L=10mH)		I _{AS}	9.5	A
Power Dissipation		P _D (T _c =25°C)	90	W
Operating and Storage Temperature Range		T _J , T _{STG}	-55 to 150	°C
Maximum Junction-to-Ambient	t ≤ 10s	R _{θJA}	20	°C/W
Maximum Junction-to-Ambient	Steady-State		50	
Maximum Junction-to-Case	Steady-State	R _{θJC}	1.39	

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V	I _D =250μA	200			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =200V	V _{GS} =0V			1	μA
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±20V	V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS}	I _D =250μA	1.0	1.5	2.0	V
Total gate charge	R _{DS(on)}	V _{GS} =10V	I _D =10A		130	170	mΩ
		V _{GS} =4.5V	I _D =10A		150	200	mΩ
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V	I _S =1A			1.2	V
Gate resistance	R _g	V _{GS} =0V f=1MHz	V _{DS} =0V,		6.5		Ω
Input Capacitance	C _{iss}	V _{DS} =25V V _{GS} =0V f=1MHz			830		pF
Output Capacitance	C _{oss}				150		
Reverse Transfer Capacitance	C _{rss}				65		
Total Gate Charge	Q _{g(10V)}	V _{GS} =10V, V _{DS} =100V, I _D =18A			27		nC
Total Gate Charge	Q _{g(4.5V)}				12		
Gate Source Charge	Q _{gs}				7		
Gate Drain Charge	Q _{gd}				3		

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=75V$ $R_L=2.5\Omega$ $R_{GEN}=3\Omega$		8		ns
Turn-On Rise Time	t_r			10		
Turn-Off Delay Time	$t_{d(off)}$			30		
Turn-Off Fall Time	t_f			4		

Electrical Characteristic Curve

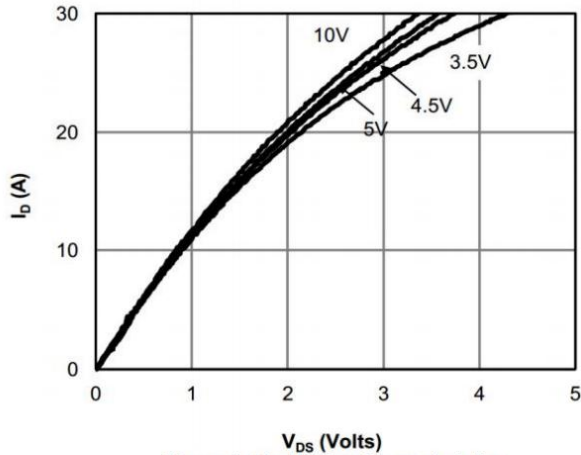


Figure 1: On-Region Characteristics

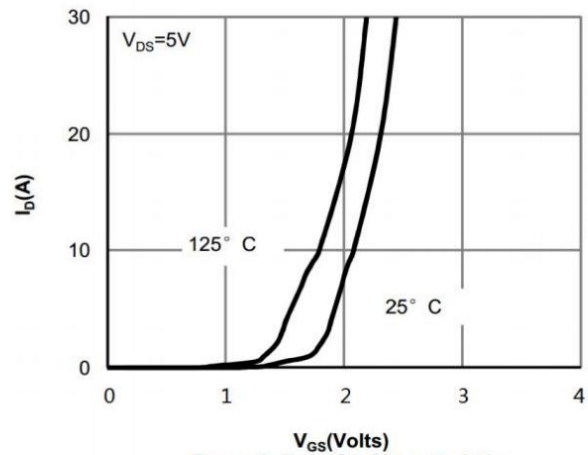


Figure 2: Transfer Characteristics

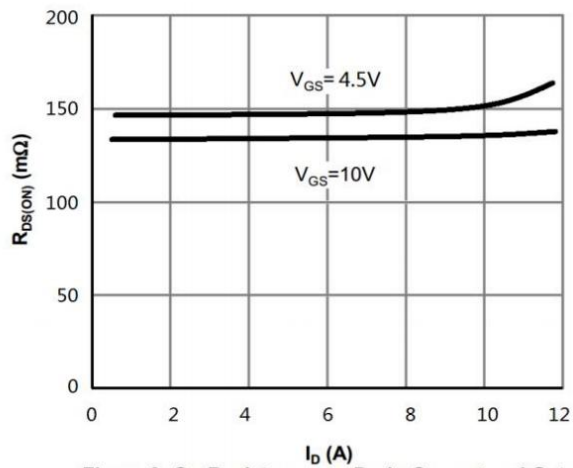


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

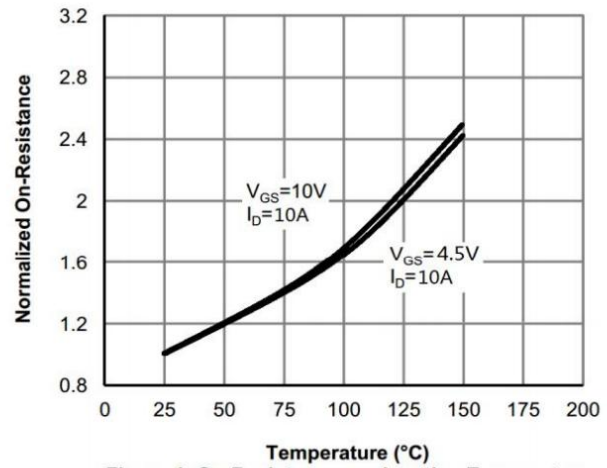


Figure 4: On-Resistance vs. Junction Temperature

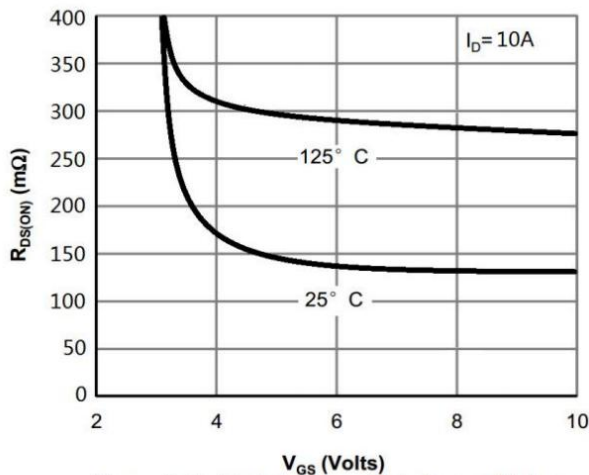


Figure 5: On-Resistance vs. Gate-Source Voltage

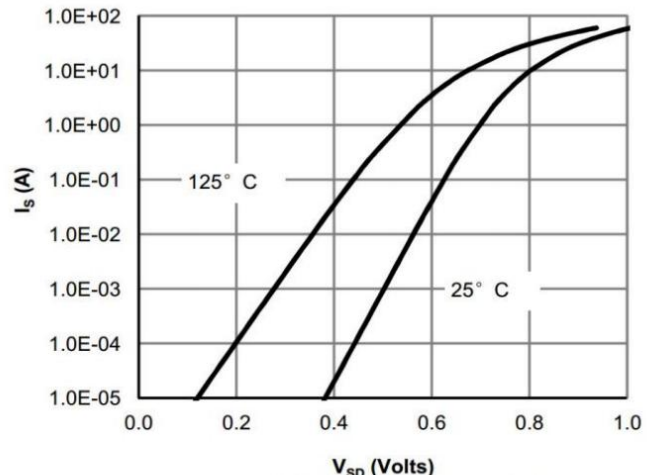
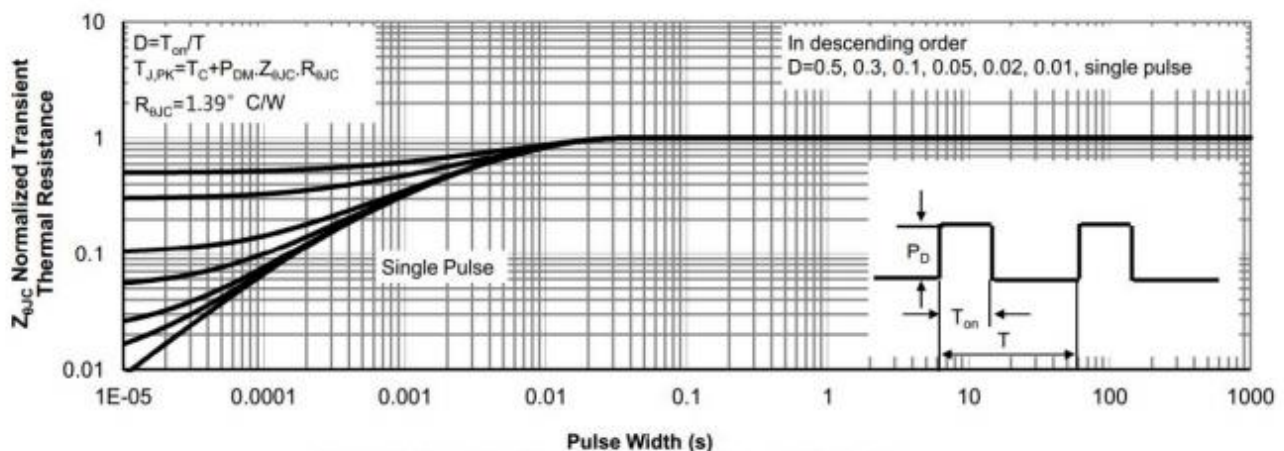
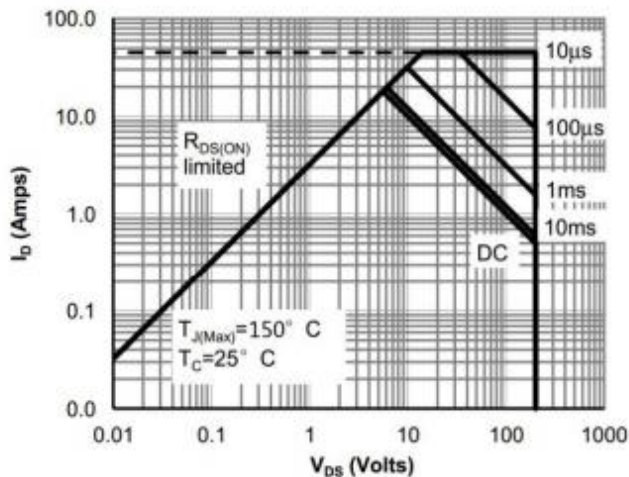
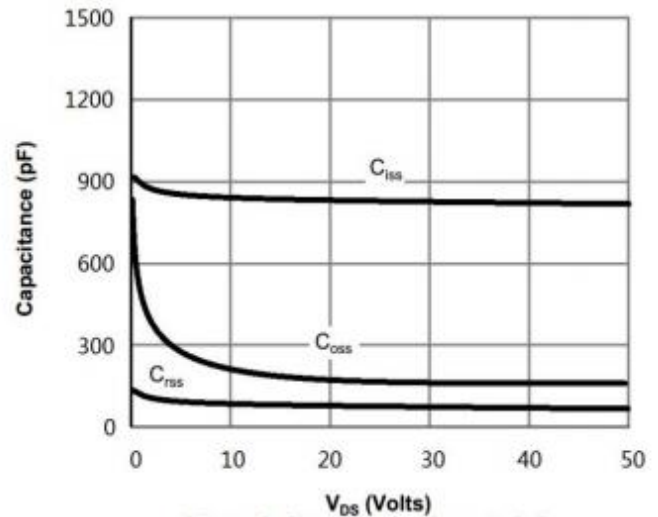
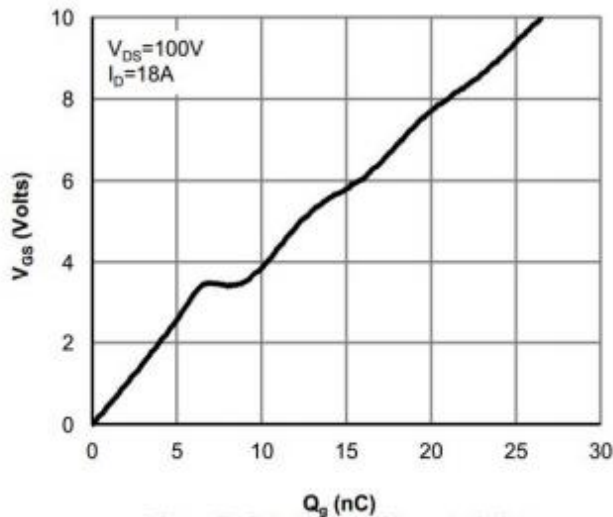
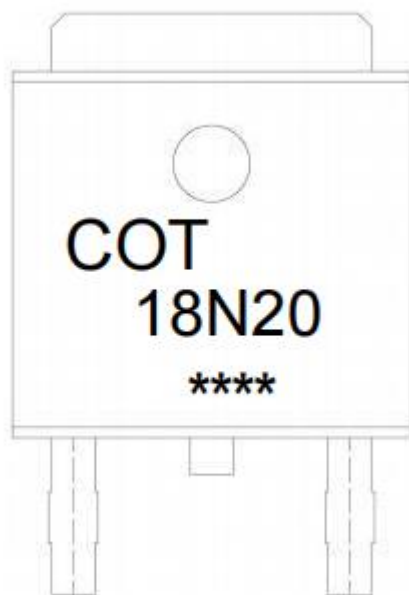


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve



Marking Instructions



Note:

COT: Company Logo

18N20: Product Type.

****: Lot No. Code, code change with Lot No.

Packaging SPEC

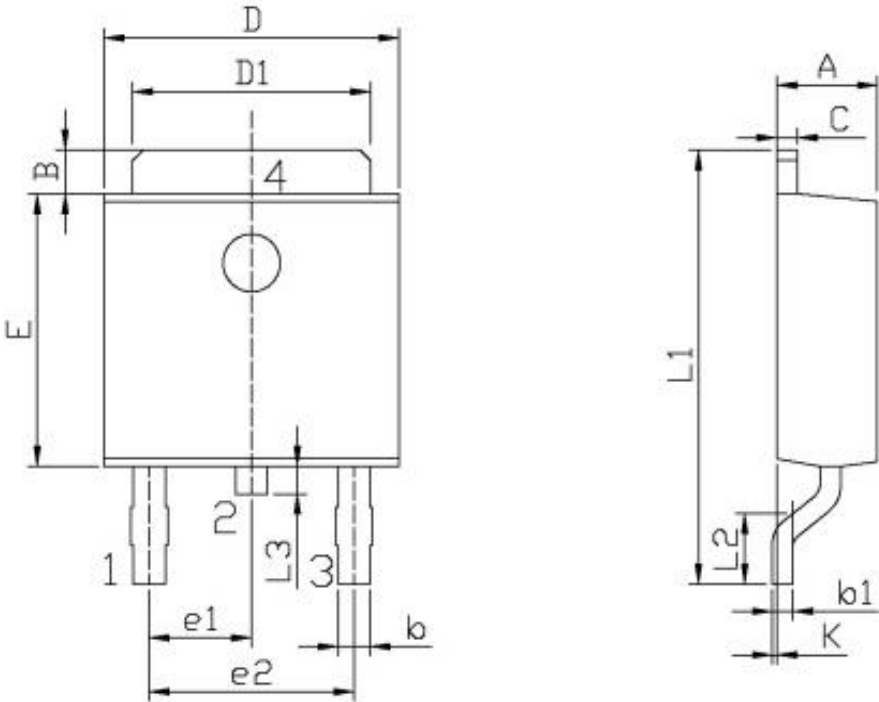
REEL

Package Type	Units					Dimension(unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
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)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

Package Outline Dimensions



单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	2.20	2.40	E	5.95	6.25
B	0.95	1.25	e1	2.24	2.34
b	0.50	0.90	e2	4.43	4.73
b1	0.45	0.55	L1	9.45	9.95
C	0.45	0.55	L2	1.25	1.75
D	6.45	6.75	L3	0.60	0.90
D1	5.10	5.50	K	0.00	0.10

TO-252