

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	18mΩ@-4.5V	-7A
	28mΩ@-2.5V	

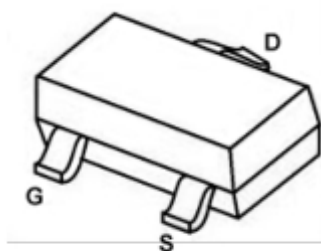
Feature

- -20V/-7A,
- $R_{DS(ON)} = 18m\Omega(Typ.)@V_{GS}=4.5V$
 $R_{DS(ON)} = 28m\Omega(Typ.)@V_{GS}=2.5V$
- Low $R_{DS(ON)}$
- Super High Dense Cell Design
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

Application

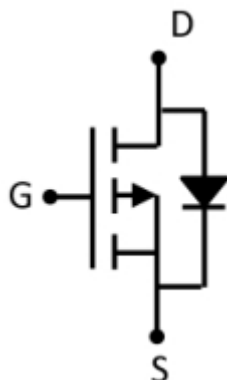
- Power Management

Package

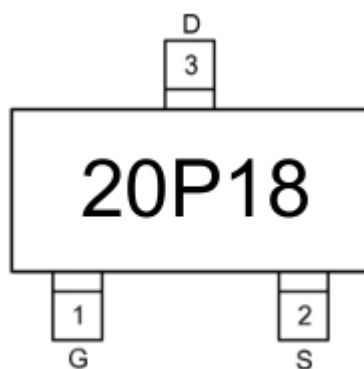


SOT-23-3L

Circuit diagram



Marking



20P18 =Device Code

Absolute maximum ratings

($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 10	V
Drain Current-Continuous	I_D	-7	A
Pulsed Drain Current	I_{DM}	-28	A
Maximum Power Dissipation	P_D	1.3	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	96	$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^{\circ}\text{C}$

Electrical characteristics

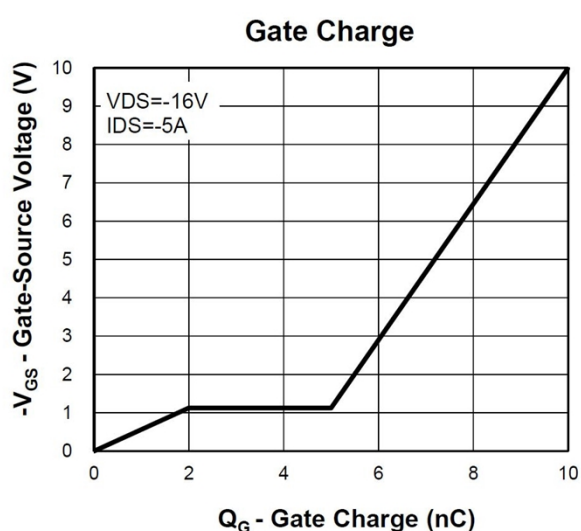
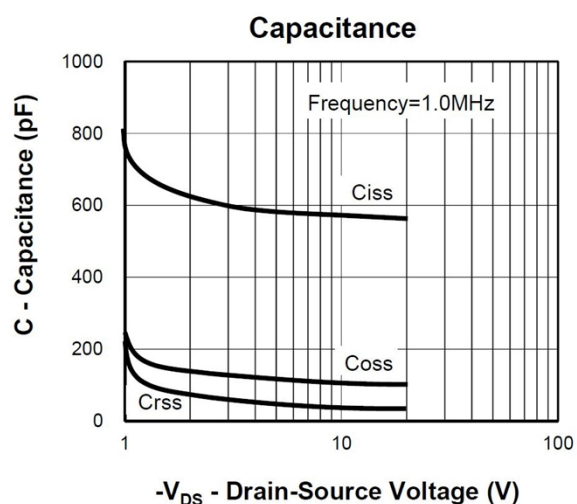
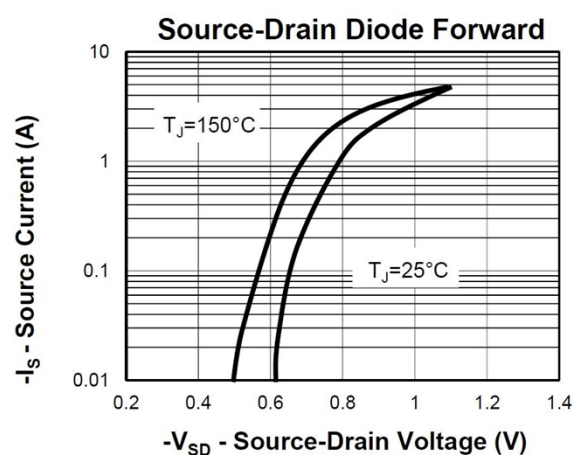
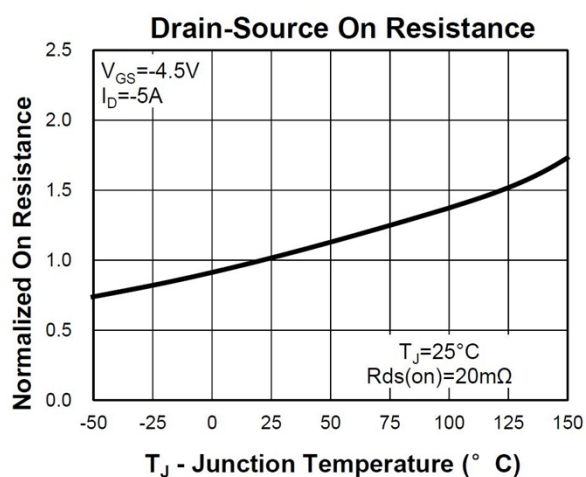
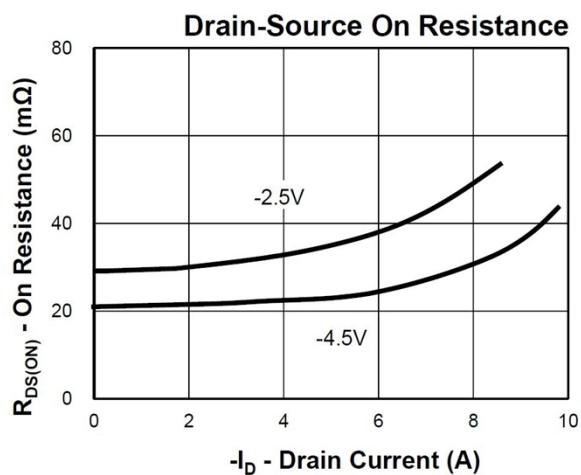
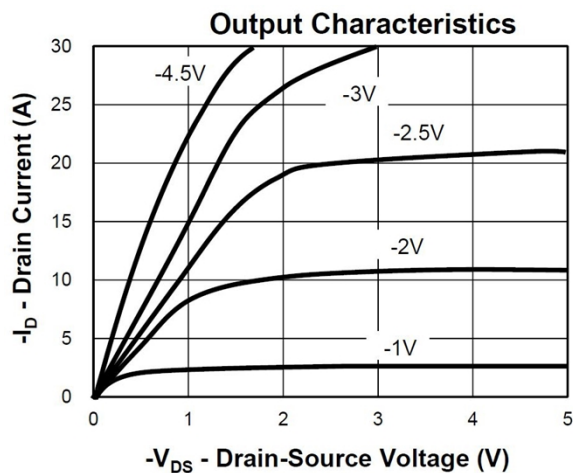
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

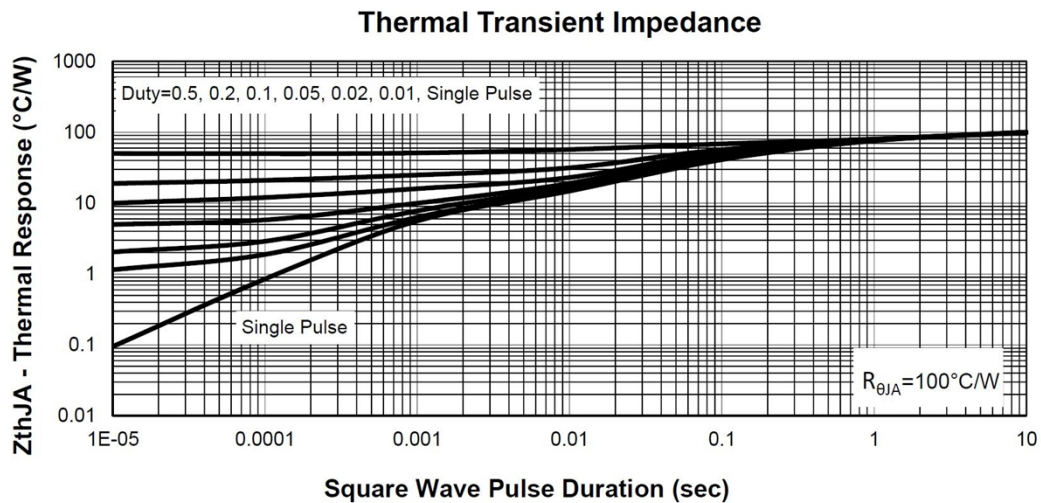
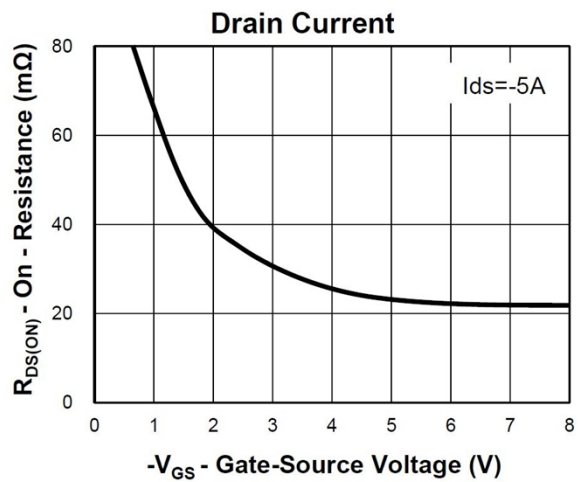
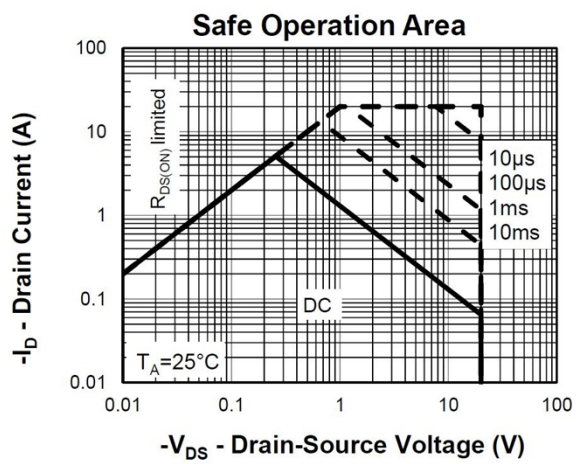
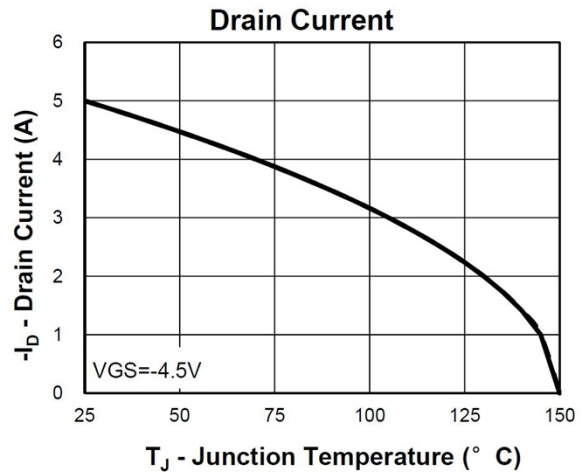
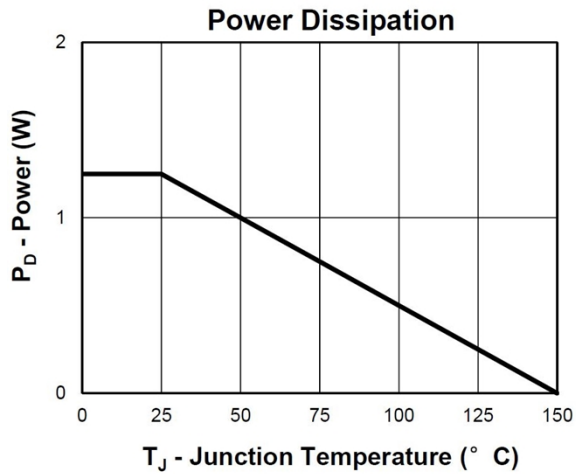
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 100	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.7	-1.1	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -5A$		18	26	m Ω
		$V_{GS} = -2.5V, I_D = -4A$		28	36	
Dynamic Characteristics ²						
Input Capacitance	C_{iss}	$V_{DS} = -10V, V_{GS} = 0V,$ $f = 1MHz$		640		pF
Output Capacitance	C_{oss}			135		
Reverse Transfer Capacitance	C_{rss}			65		
Switching Characteristics ²						
Turn-On Delay Time	$T_{d(on)}$	$V_{GD} = -4.5V, V_{DS} = -10V,$ $R_L = 3.8\Omega, R_{GEN} = 6\Omega$		9		nS
Rise Time	T_r			16		
Turn-Off Delay Time	$T_{d(off)}$			45		
Fall Time	T_f			21		
Total Gate Charge	Q_g	$V_{DS} = -10V, V_{DS} = -16V,$ $I_D = -5A$		10		pF
Gate Source Charge	Q_{gs}			2		
Gate Drain Charge	Q_{gd}			3		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = -1A$			-1.2	V

Note:

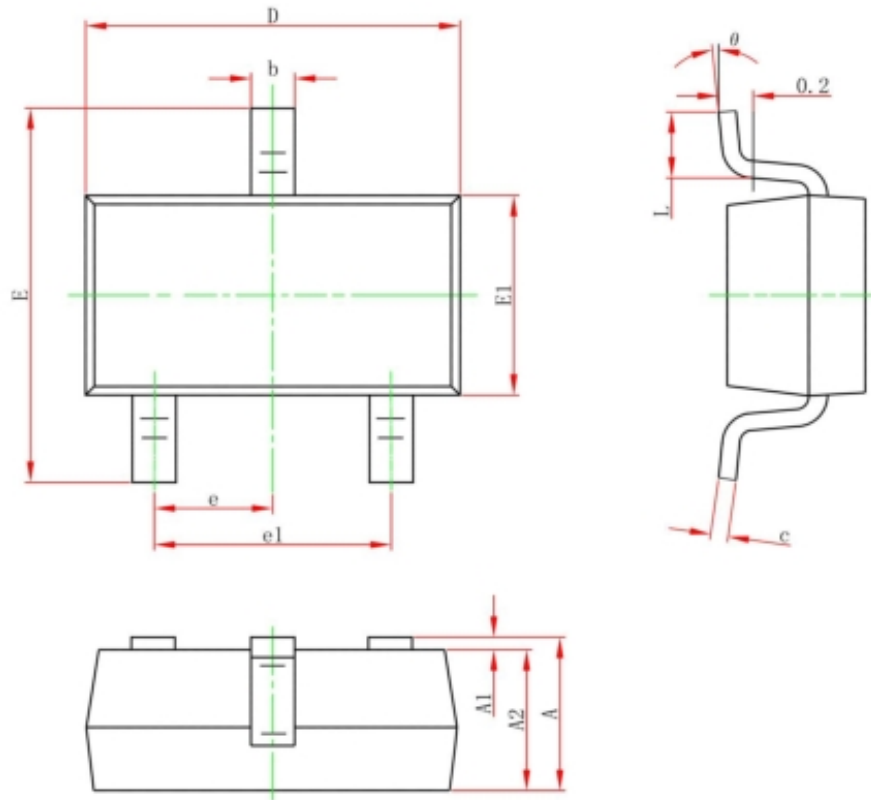
1. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production

Typical Characteristics





SOT-23-3L Package Information



Symbol	Dimensions in millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E1	1.500	1.700
E	2.650	2.950
e	0.950 Typ.	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°