

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-40V	35mΩ@-10V	-6A
	50mΩ@-4.5V	

Feature

- High Cell Density Trenched P-ch MOSFETS
- Excellent RDSON
- Low Gate Charge

Application

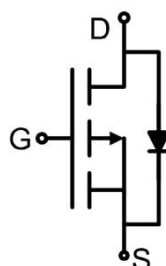
- DC-DC converter
- Power switching application
- Hard switched and high frequency circuits

Package

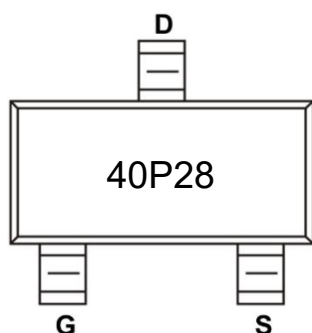


SOT-23-3L

Circuit diagram



Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-40	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-6	A
Pulsed Drain Current	I_{DM}	-24	A
Power Dissipation	P_D	1	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	125	$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature	T_J	-55 ~ +150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

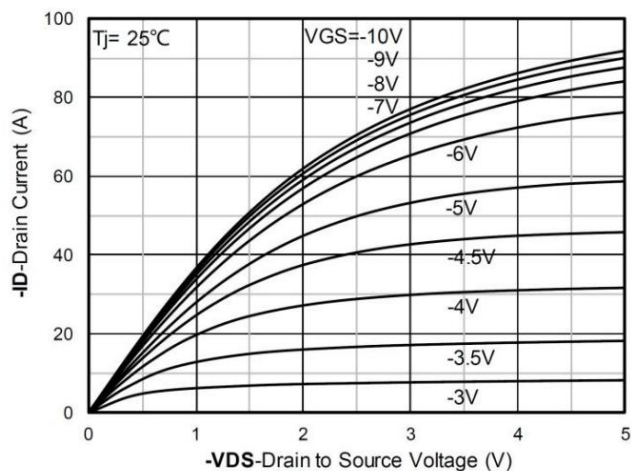
Electrical characteristics ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-40			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -32V, V_{GS} = 0V$			-1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.2	-1.5	-2.5	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -4.1A$		28	35	m Ω
		$V_{GS} = -4.5V, I_D = -3A$		38	50	
Dynamic characteristics ¹⁾						
Input Capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V, f = 1MHz$		1415		pF
Output Capacitance	C_{oss}			134		
Reverse Transfer Capacitance	C_{rss}			102		
Total Gate Charge	Q_g	$V_{DS} = -15V, V_{GS} = -10V, I_D = -6A$		23.5		nC
Gate-Source Charge	Q_{gs}			4.5		
Gate-Drain Charge	Q_{gd}			3.3		
Turn-on delay time	$t_{d(on)}$	$V_{DS} = -15V, V_{GS} = -10V, I_D = -6A, R_G = 3.3\Omega$		11		nS
Turn-on rise time	t_r			15.7		
Turn-off delay time	$t_{d(off)}$			35		
Turn-off fall time	t_f			5.5		
Source-Drain Diode characteristics						
Diode Forward Current	I_S				-6	A
Diode Forward voltage	V_{SD}	$V_{GS} = 0V, I_S = -1A, T_J = 25^{\circ}C$			-1.2	V

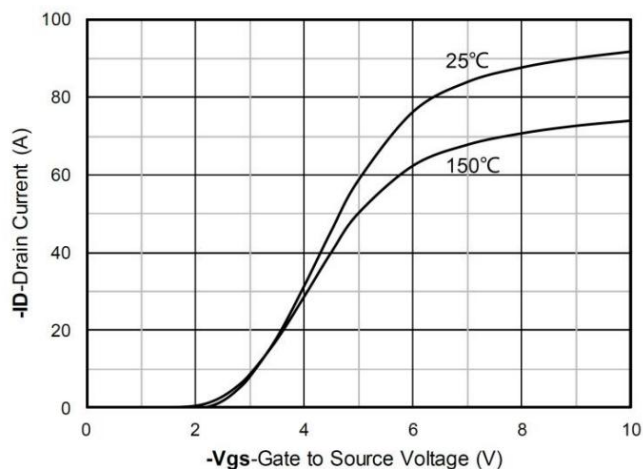
Notes:

1) Guaranteed by design, not subject to production.

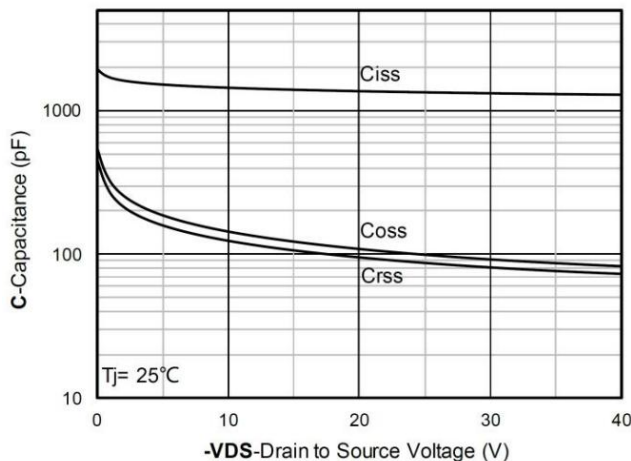
Typical Characteristics



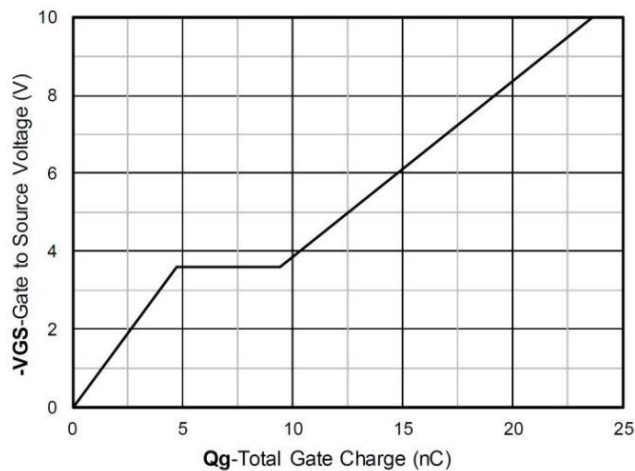
Output Characteristics



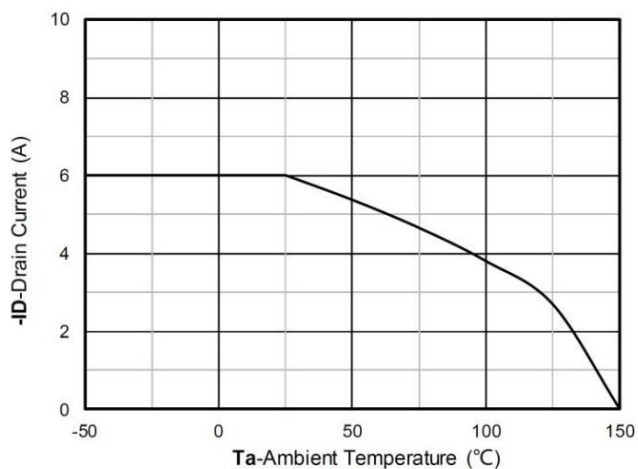
Transfer Characteristics



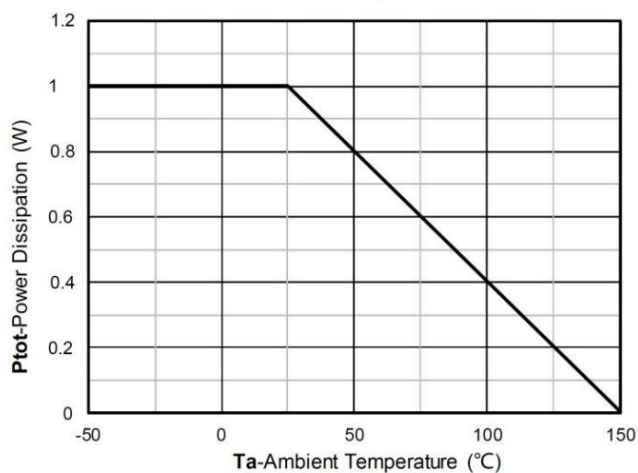
Capacitance Characteristics



Gate Charge

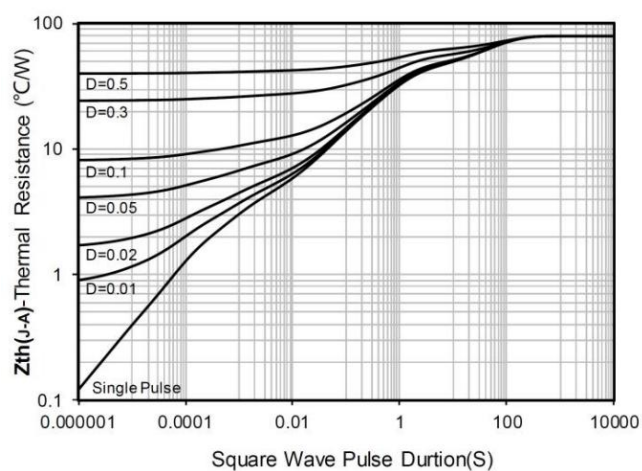


Current dissipation

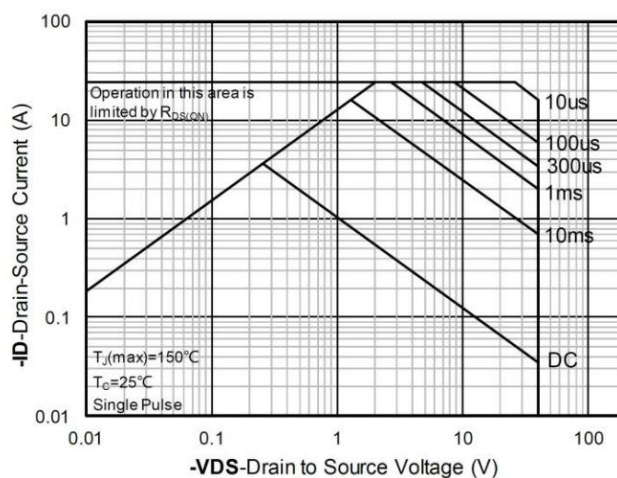


Power dissipation

Typical Characteristics

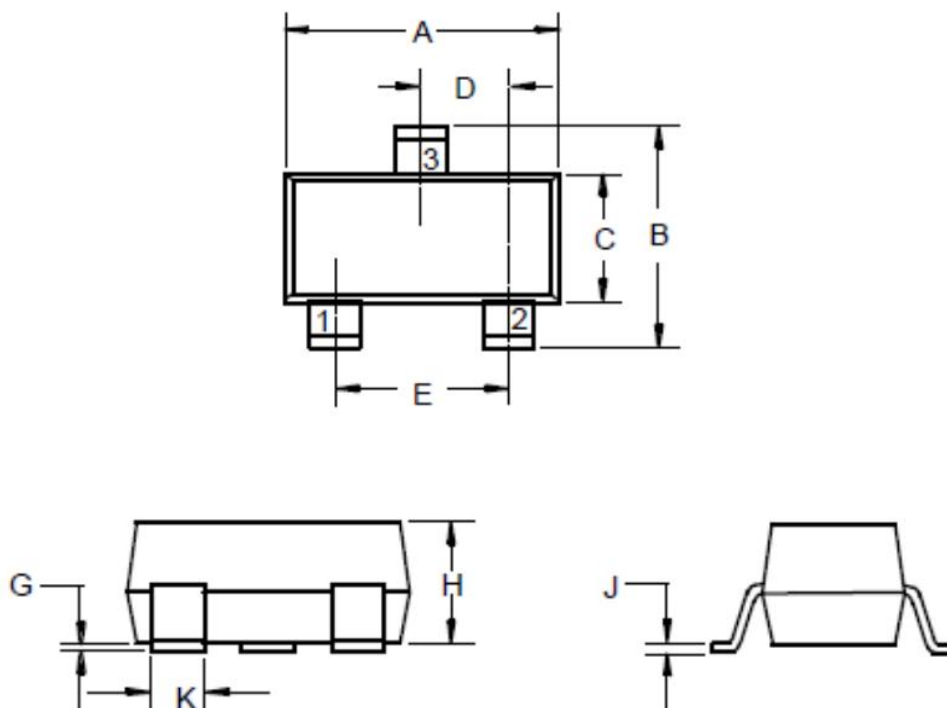


Maximum Transient Thermal Impedance



Safe Operation Area

SOT-23-3L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.700	3.100	0.106	0.122
B	2.650	2.950	0.104	0.116
C	1.500	1.700	0.059	0.067
D	0.865	1.015	0.034	0.040
E	1.800	2.000	0.071	0.079
G	0.000	0.100	0.000	0.004
H	1.050	1.250	0.041	0.049
J	0.100	0.200	0.004	0.008
K	0.300	0.500	0.012	0.020