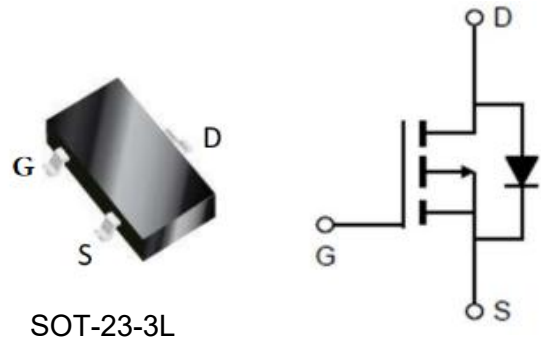


Features

- ◆ -30V, -4.3A, $R_{DS(ON)}$ (Typ.)=39m Ω @ $V_{GS} = -10V$.
- ◆ This device is suitable for use as a load switch or other general applications.
- ◆ RoHS and Halogen-Free Compliant.



SOT-23-3L

Absolute Maximum Ratings $T_c = 25^\circ \text{C}$ unless otherwise noted

Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	
I_D	Drain Current-Continuous, $T_A = 25^\circ\text{C}$	-4.3	A
I_{DM}	Drain Current-Pulsed ^b	-20	
P_D	Maximum Power Dissipation @ $T_A = 25^\circ\text{C}$	1.4	W
T_{STG}	Store Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient Max ^a	125	$^\circ\text{C}/\text{W}$

Electrical Characteristics $T_J = 25^\circ \text{C}$ unless otherwise noted

Off Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = -250\mu\text{A}$	-30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = -30V, V_{GS} = 0V$	-	-	-1	μA
I_{GSS}	Forward Gate Body Leakage Current	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	± 100	nA



■ On Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.9	-1.5	-2.0	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS} = -4.5V, I_D = -3.5A$	-	55	78	mΩ
		$V_{GS} = -10V, I_D = -4A$	-	39	48	
gfs	Forward Transconductance	$V_{DS} = -5V, I_D = -4A$	-	8.2	-	S

■ Dynamic Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
C_{iss}	Input Capacitance	$V_{DS} = -15V,$ $V_{GS} = 0V,$ $f = 1.0MHz$	-	500	-	pF
C_{oss}	Output Capacitance		-	70	-	
C_{rss}	Reverse Transfer Capacitance		-	60	-	

■ On Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$t_{d(on)}$	Turn-On Delay Time	$V_{DS} = -15V, R_L = 15\Omega,$ $R_G = 2.5\Omega, V_{GS} = -10V$	-	14	-	ns
$t_{d(off)}$	Turn-Off Delay Time		-	19	-	
$Q_g(10V)$	Total Gate Charge	$V_{DS} = -24V, I_D = -4A,$ $V_{GS} = -10V$	-	6.8	-	nC

■ Drain-Source Diode Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS} = 0V, I_{SD} = -4.1A$	-	-0.87	-1.2	V
I_S	Continuous Source Current		-	-	-1.6	A

Notes:

a: The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 1oz. Copper, in a still air environment with $T_A = 25^\circ C$. The value in any given application depends on the user's specific board design.

b: Repetitive rating, pulse width limited by junction temperature $T_J(MAX) = 150^\circ C$. Ratings are based on low frequency and duty cycles to keep initial $T_J = 25^\circ C$.

Typical Characteristics

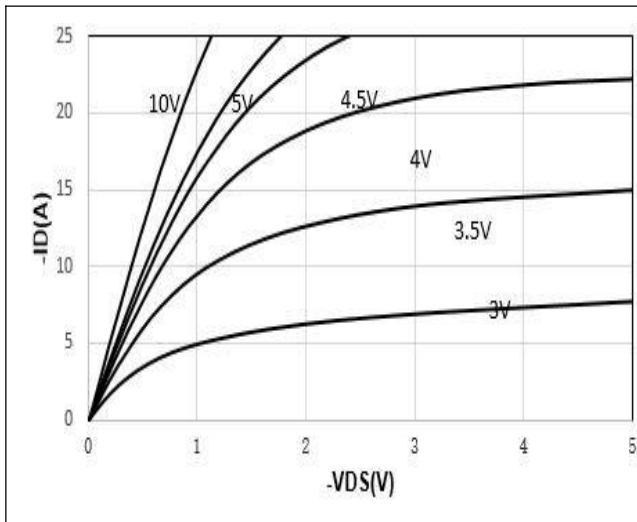


Figure 1. Output Characteristics

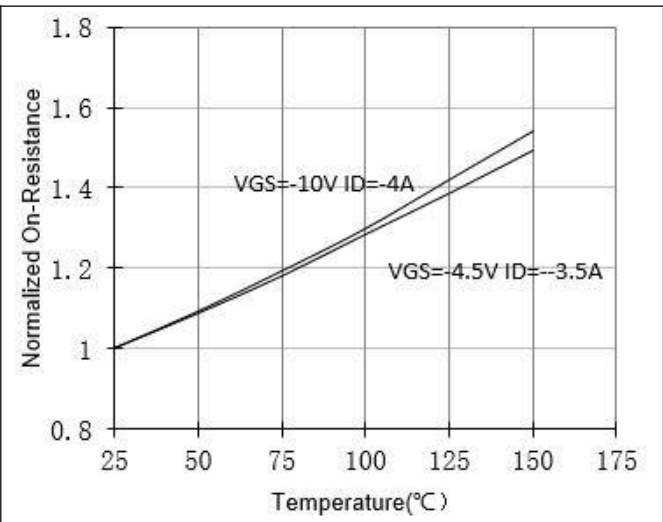


Figure 2. On-Resistance vs. Junction Temperature

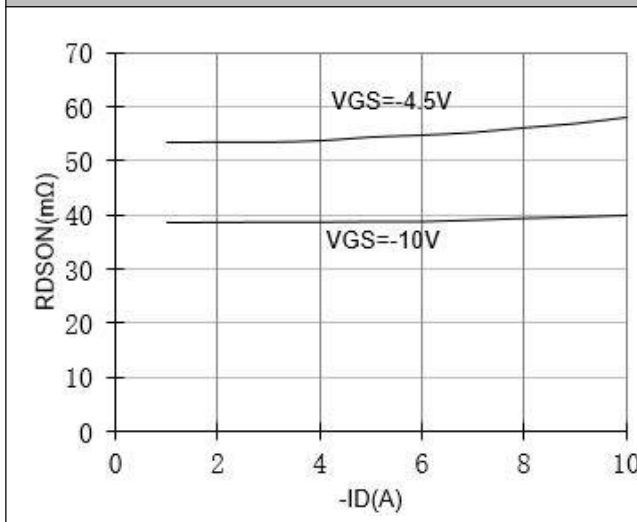


Figure 3. On-Resistance vs. Drain Current

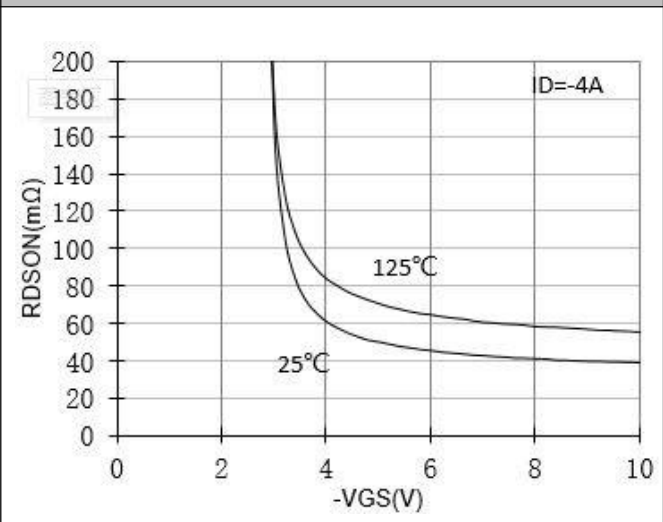


Figure 4. On-Resistance vs. Gate-Source Voltage

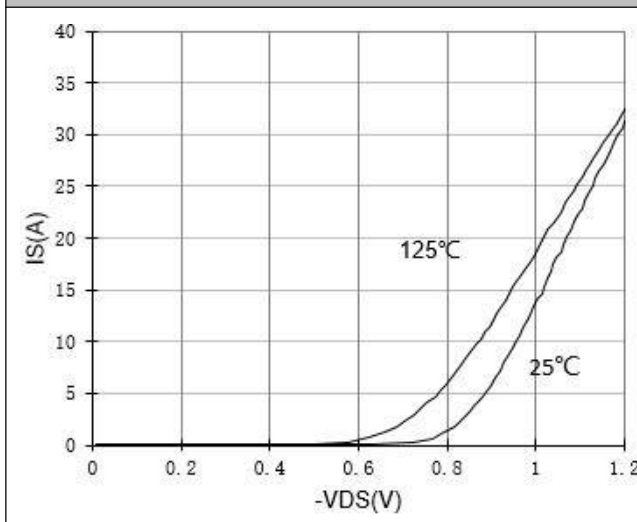


Figure 5. Body-Diode Characteristics

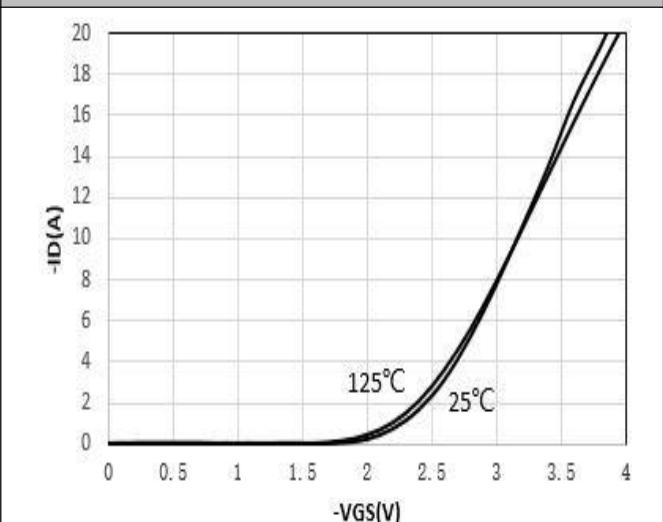


Figure 6. Transfer Characteristics

Typical Characteristics

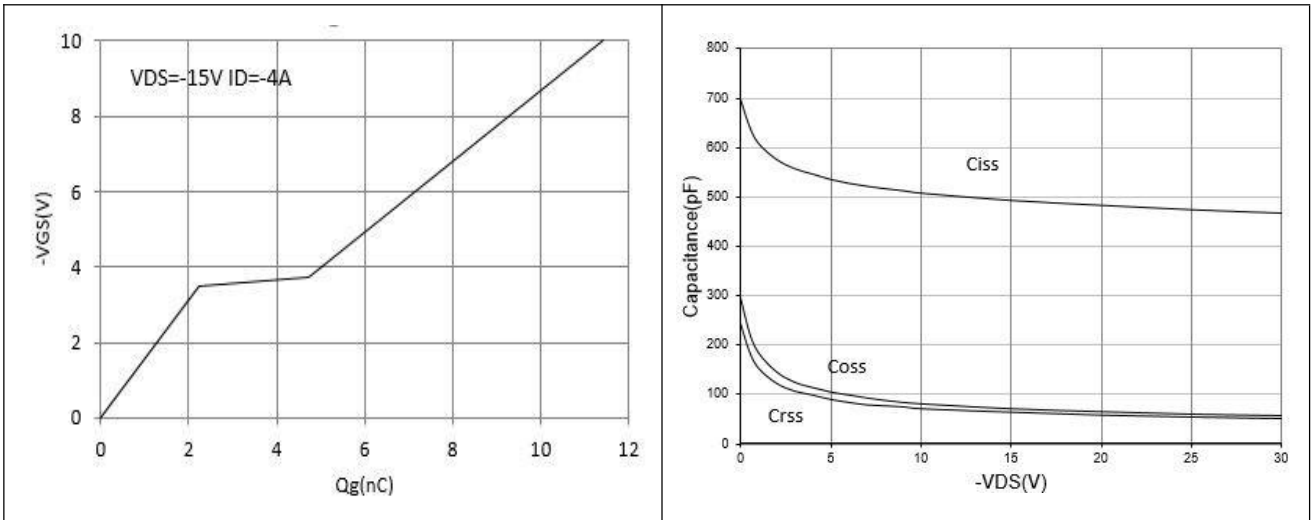


Figure 7. Charge Characteristics

Figure 8. Capacitance Characteristics

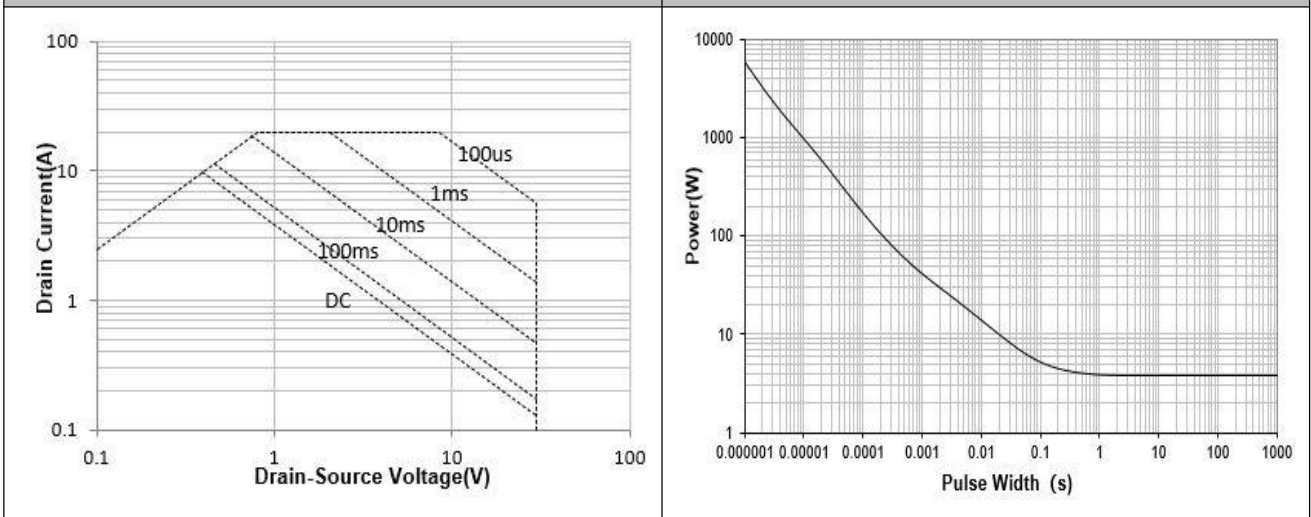


Figure 9. Maximum Forward Biased Safe Operating Area

Figure 10. Single Pulse Power Rating Junction-to-Ambient

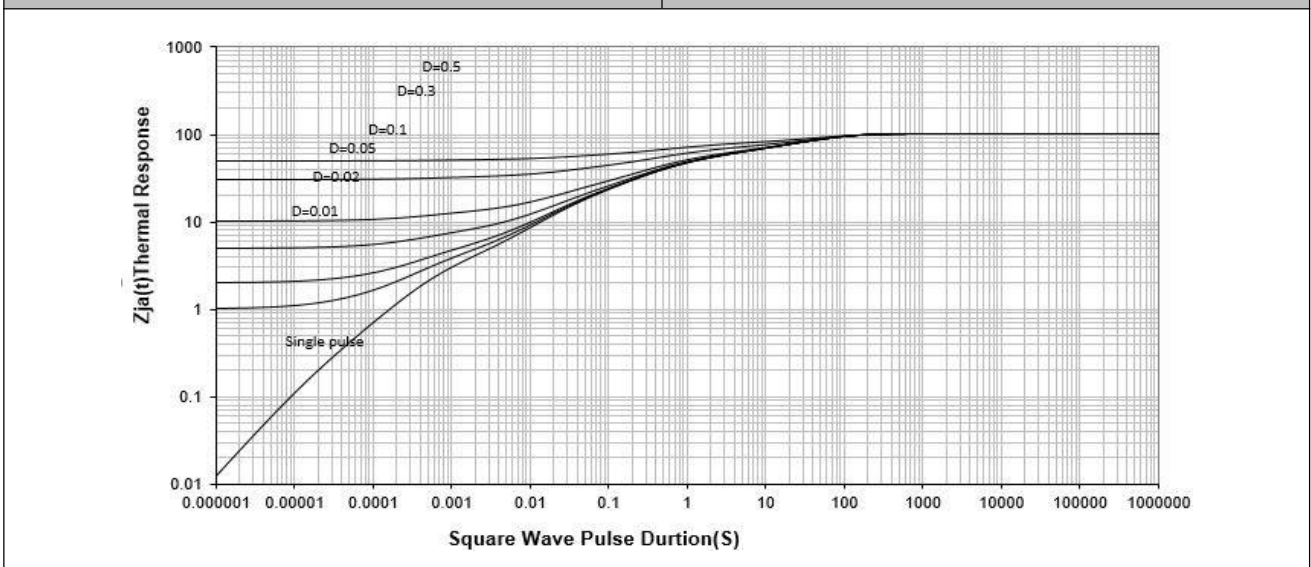
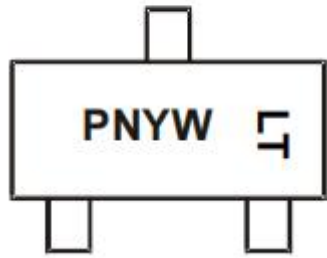


Figure 11. Normalized Maximum Transient Thermal Impedance



■ **Marking Information**

SOT23-3L



PN=17
YW= Date Code Marking
Y= Year W = Week
LT= Lot code