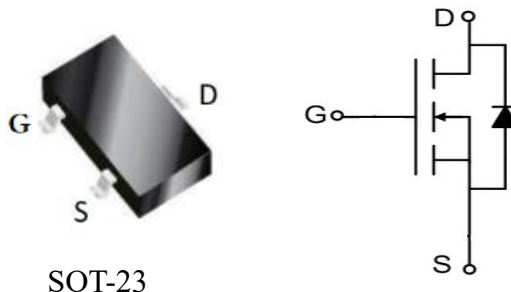


Features

- ◆ 30V, 5.0A
 - $R_{DS(ON)}(Typ.) = 28m\Omega @ V_{GS} = 10V.$
 - $R_{DS(ON)}(Typ.) = 30m\Omega @ V_{GS} = 4.5V.$
 - $R_{DS(ON)}(Typ.) = 35m\Omega @ V_{GS} = 2.5V.$
- ◆ Advanced Trench Technology
- ◆ Excellent $R_{DS(ON)}$ and Low Gate Charge
- ◆ Lead Free.



Applications

- ◆ Load Switch
- ◆ PWM Application
- ◆ Power Management

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

Symbol	Parameter		Limit	Unit
V_{DS}	Drain-Source Voltage		30	V
V_{GS}	Gate-Source Voltage		± 12	
I_D	Drain Current-Continuous	$T_A = 25^\circ C$	5.0	A
		$T_A = 100^\circ C$	3.0	
I_{DM}	Drain Current-Pulsed ^a		20	
P_D	Maximum Power Dissipation @ $T_A = 25^\circ C$		1.2	W
T_{STG}	Store Temperature Range		-55 to 150	$^\circ C$

Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient Max ^c	103	$^\circ C/W$

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

Off Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 30V, V_{GS} = 0V$	-	-	1.0	μA
I_{GSS}	Forward Gate Body Leakage Current	$V_{DS} = 0V, V_{GS} = \pm 12V$	-	-	± 100	nA

■ On Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.6	0.95	1.4	V
$R_{DS(on)}$	Static Drain-Source On-Resistance ^d	$V_{GS} = 10V, I_D = 4A$	-	28	35	mΩ
		$V_{GS} = 4.5V, I_D = 3A$	-	30	38	
		$V_{GS} = 2.5V, I_D = 2A$	-	35	45	

■ Dynamic Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
C_{iss}	Input Capacitance	$V_{DS} = 15V,$ $V_{GS} = 0V,$ $f = 1.0MHz$	-	665	-	pF
C_{oss}	Output Capacitance		-	52	-	
C_{rss}	Reverse Transfer Capacitance		-	43	-	
Q_g	Total Gate Charge	$V_{GS} = 0 \text{ to } 4.5V$ $V_{DS} = 15V, I_D = 3A$	-	7.0	-	nC
Q_{gs}	Gate Source Charge		-	1.7	-	
Q_{gd}	Gate Drain Charge		-	1.6	-	

■ On Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 15V, V_{GS} = 4.5V$ $I_D = 3A, R_{GEN} = 3\Omega,$	-	4	-	ns
t_r	Turn-Off Rise Time		-	17	-	
$t_{d(off)}$	Turn-Off Delay Time		-	95	-	
t_f	Turn-Off Fall Time		-	36	-	

■ Drain-Source Diode Characteristics

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
I_S	Drain-Source Diode Forward Continuous Current		-	-	5	A
I_{SM}	Maximum Pulsed Diode Forward Current		-	-	20	A
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS} = 0V, I_{SD} = 5A$	-	-	1.2	V
T_{rr}	Body Diode Reverse Recovery Time	$di/dt = 100A/\mu s$ $I_F = 3A$	-	6.7	-	ns
Q_{rr}	Body Diode Reverse Recovery Charge		-	2.3	-	nC

Notes:

a: Max. current is limited by junction temperature.

b: Pulse test (pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$).

Typical Characteristics

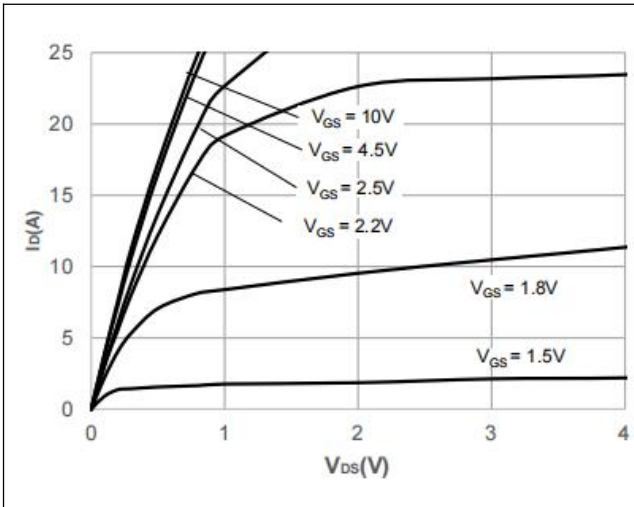


Figure 1. Output Characteristics

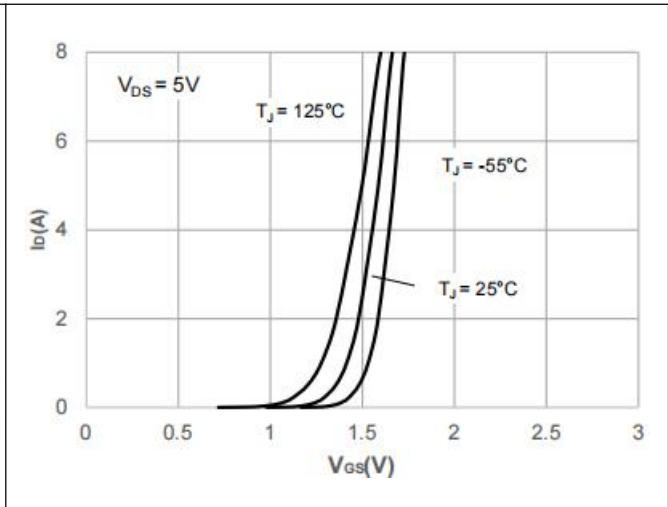


Figure2. Typical Transfer Characteristics

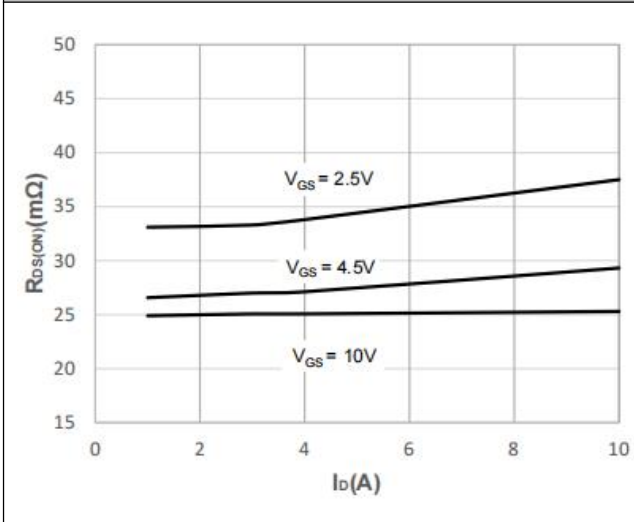


Figure 3. On-Resistance vs. Drain Current

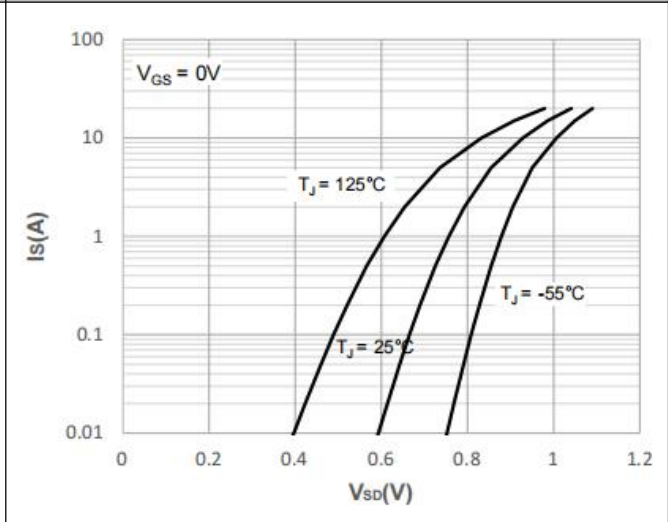


Figure 4.Body Diode Characteristics

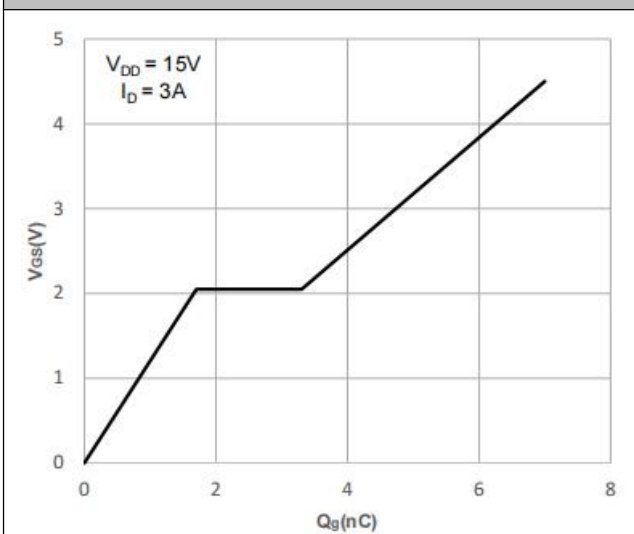


Figure 5.Gate Charge Characteristics

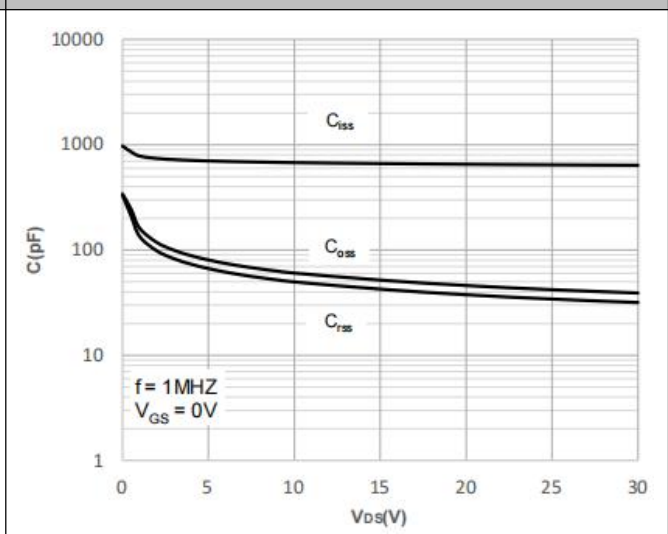
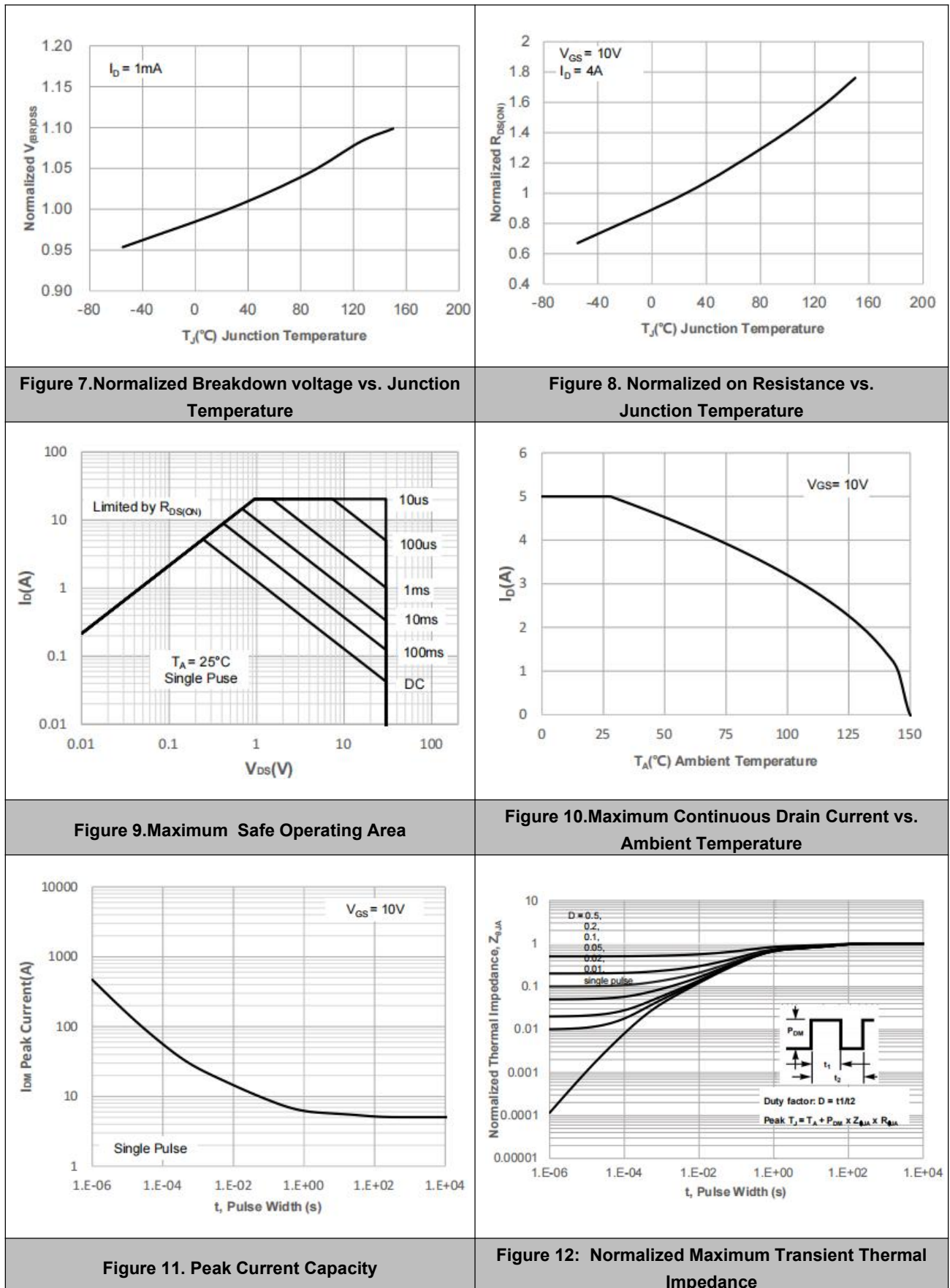


Figure 6.Capacitance Characteristics

Typical Characteristics



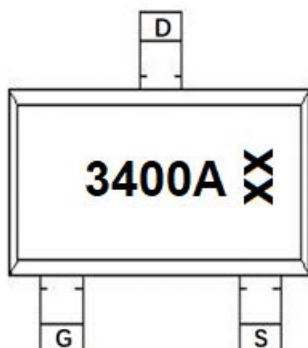


MU3400T

N-Channel Enhancement Mode MOSFET

■ Marking Information

SOT-23



NOTE:

3400-Part number code

A-Version number code

XX-Week code