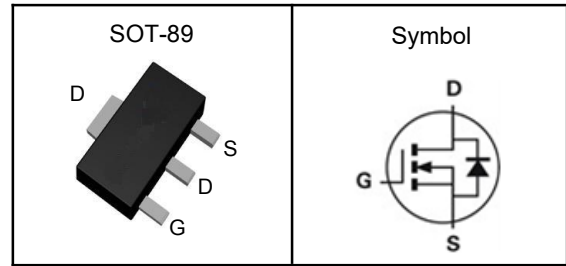


N-Channel Enhancement Mode MOSFET
: YUi fYg

- Low Rdson for low conduction loss
- Reliable and Rugged
- ROHS Compliant & Halogen-Free

D]b 8 YgW]dljcb

Applications

- Power Management in Desktop Computer
- DC/DC Converters

V_{DSS}	30	V
$R_{DS(ON)-Typ}$	19	m Ω
I_D	7	A

Absolute Maximum Ratings($T_J=25^\circ\text{C}$, Unless Otherwise Noted)

Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-Source Voltage	30	V
V_{GSS}	Gate-Source Voltage	± 20	V
T_J	Maximum Junction Temperature	-55 to 150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
I_S	Diode Continuous Forward Current	1.7	A
$I_{DM}^{①}$	Pulse Drain Current Tested	42	A
I_D	Continuous Drain Current	$T_J=150^\circ\text{C}$ 7	A
P_D	Maximum Power Dissipation	$T_A=25^\circ\text{C}$ 1.25	W

Thermal Characteristics

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	90	$^\circ\text{C/W}$

Note ① : Max. current is limited by bonding wire.

 Note ② : UIS tested and pulse width are limited by maximum junction temperature 150°C .

 Note ③ : Surface Mounted on 1in^2 FR-4 board with 1oz.



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Electrical Characteristics (T_J=25°C, Unless Otherwise Noted)

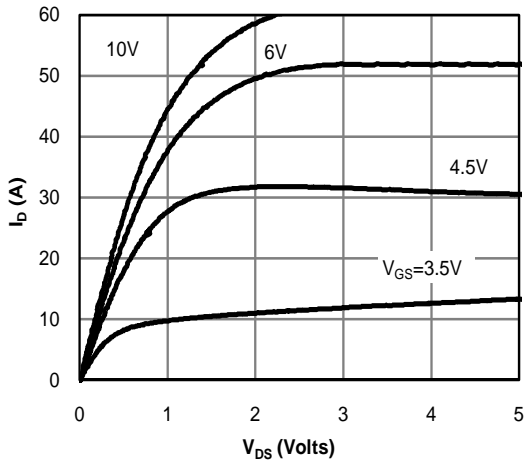
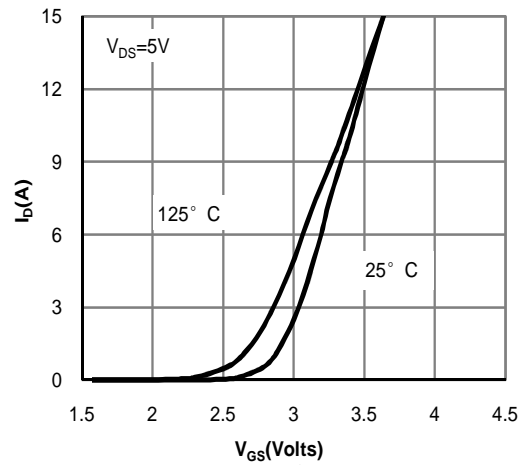
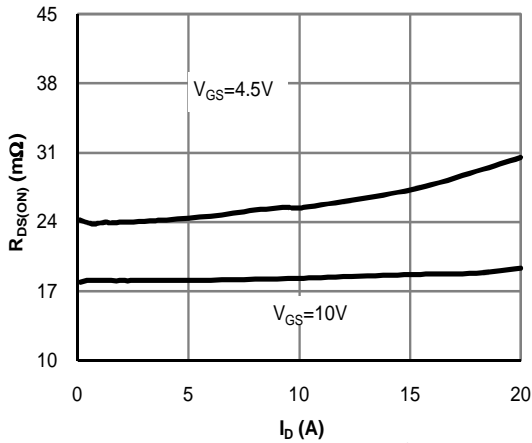
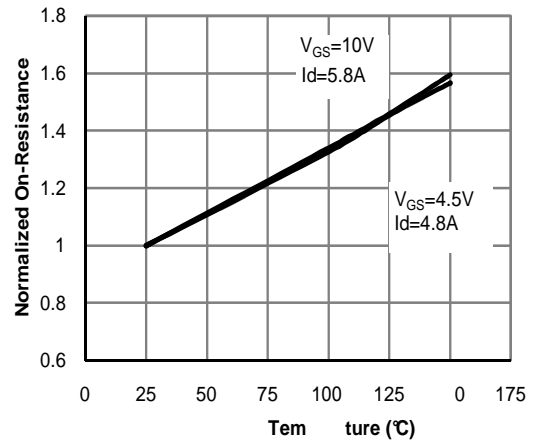
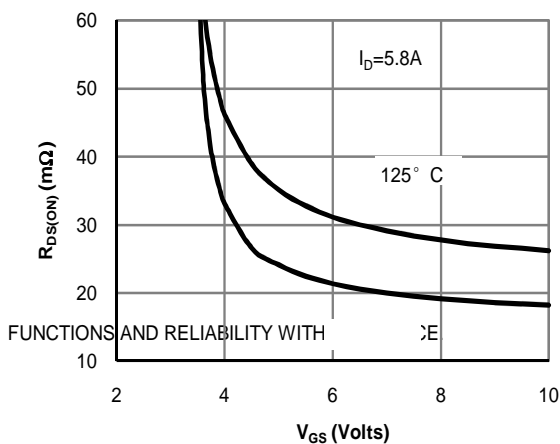
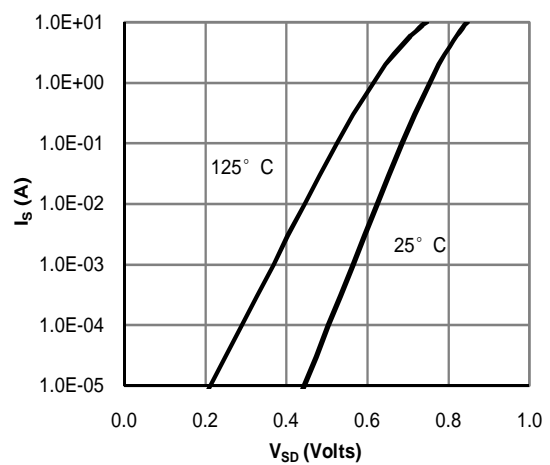
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Static Electrical Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	30	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =100V, V _{GS} =0V	---	---	1	uA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	0.8	---	2	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
R _{DS(ON)}	Drain-Source On-state Resistance	V _{GS} =10V, I _D =5.7A	---	19	25	mΩ
		V _{GS} =4.5V, I _D =5A	---	25	35	mΩ
Dynamic Characteristics ^⑤						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =15V, Freq.=1MHz	---	416	---	pF
C _{oss}	Output Capacitance		---	62	---	
C _{rss}	Reverse Transfer Capacitance		---	40	---	
T _{d(on)}	Turn-on Delay Time	V _{GS} =10V, V _{DS} =15V R _G =6Ω, I _D =1A, R _L =10Ω	---	7	---	nS
T _r	Turn-on Rise Time		---	10	---	
T _{d(off)}	Turn-off Delay Time		---	20	---	
T _f	Turn-off Fall Time		---	11	---	
R _g	Gate Resistance	f = 1.0MHz, open drain	---	4.5	---	Ω
Q _g	Total Gate Charge	V _{DS} =15V, V _{GS} =10V, I _D =1.6A	---	6	---	nC
Q _{gs}	Gate-Source Charge		---	1.7	---	
Q _{gd}	Gate-Drain Charge		---	3.2	---	
Source-Drain Characteristics (T _J =25°C)						
V _{SD} ^④	Diode Forward Voltage	I _S =1A, V _{GS} =0V	---	0.7	1.0	V

Note ④ : Pulse test (pulse width≤300us, duty cycle≤2%).

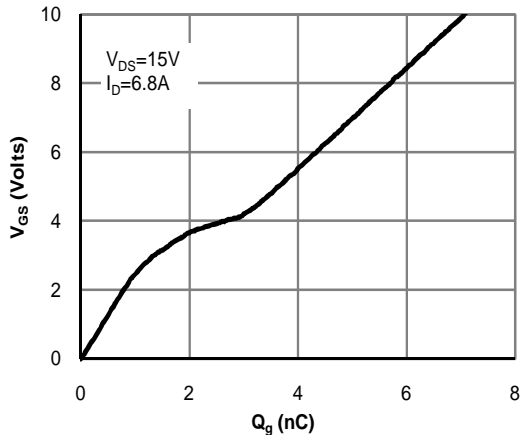
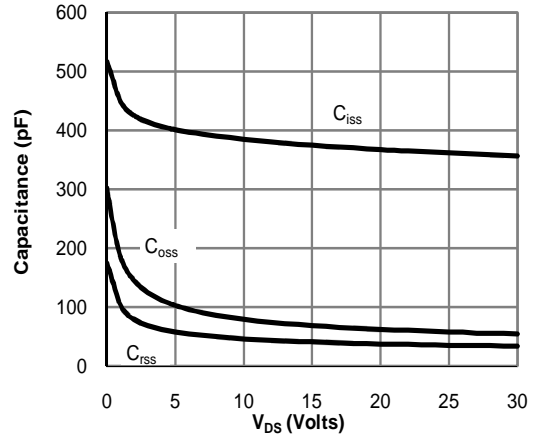
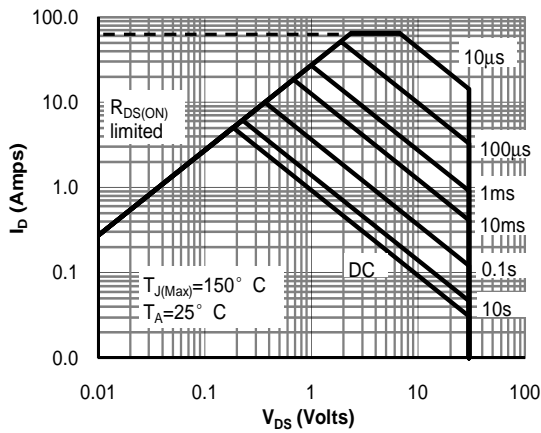
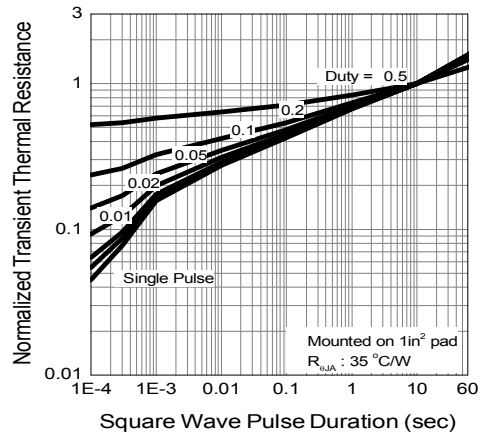
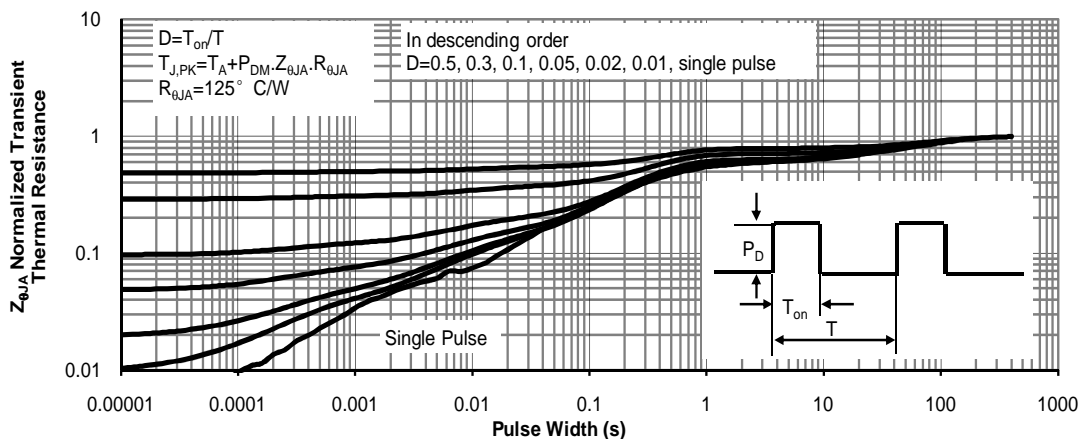
Note ⑤ : Guaranteed by design, not subject to production testing.

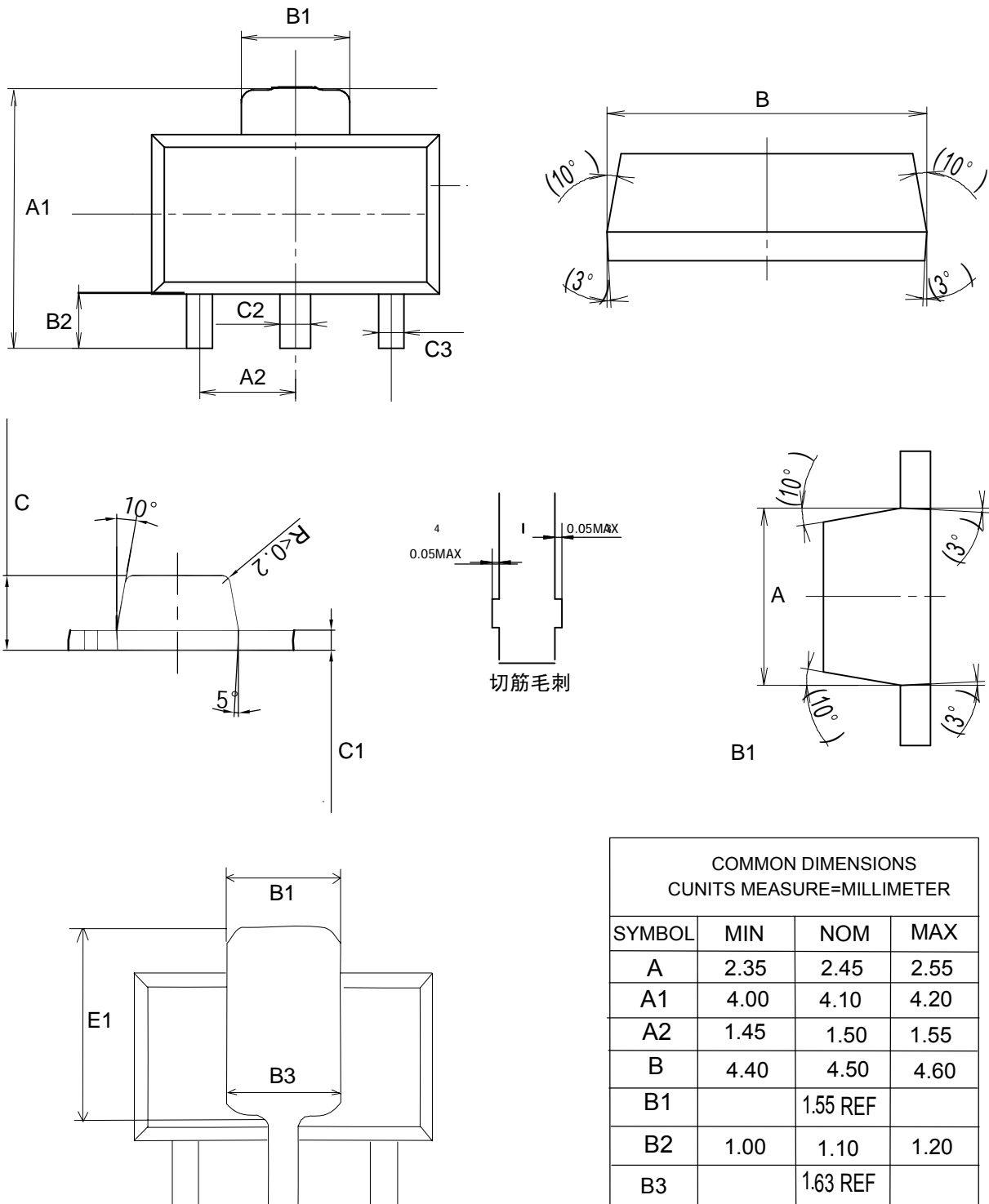
N-Channel Enhancement Mode MOSFET

Typical Characteristics


Fig 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

N-Channel Enhancement Mode MOSFET


Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

Figure 10 Thermal Transient Impedance

Figure 11: Normalized Maximum Transient Thermal Impedance

N-Channel Enhancement Mode MOSFET
SOT-89 Package Outline Data


COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER			
SYMBOL	MIN	NOM	MAX
A	2.35	2.45	2.55
A1	4.00	4.10	4.20
A2	1.45	1.50	1.55
B	4.40	4.50	4.60
B1		1.55 REF	
B2	1.00	1.10	1.20
B3		1.63 REF	
C	1.45	1.50	1.55
C1	0.39	0.40	0.41
C2	0.4	0.48	0.55
C3	0.35	0.4	0.45
E1	2.65	2.75	2.85