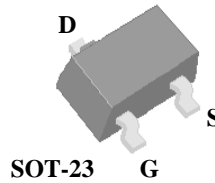
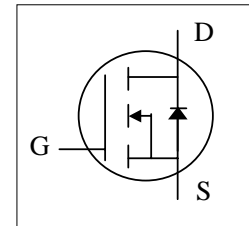




- ▼ Simple Drive Requirement
- ▼ Small Package Outline
- ▼ Surface Mount Device
- ▼ Halogen Free & RoHS Compliant Product



BV_{DSS}	600V
$R_{DS(ON)}$	300 Ω
I_D	27mA



Description

Advanced Power MOSFETs utilized advanced processing techniques to achieve the lowest possible on-resistance, extremely efficient and cost-effectiveness device.

The SOT-23 package is widely used for commercial-industrial applications.

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	600	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D @ T_A = 25^\circ C$	Continuous Drain Current ³ , $V_{GS} @ 10V$	27	mA
$I_D @ T_A = 70^\circ C$	Continuous Drain Current ³ , $V_{GS} @ 10V$	21	mA
I_{DM}	Pulsed Drain Current ¹	100	mA
$P_D @ T_A = 25^\circ C$	Total Power Dissipation	0.5	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$

Thermal Data

Symbol	Parameter	Value	Unit
Rthj-a	Maximum Thermal Resistance, Junction-ambient ³	250	$^\circ C/W$

Data and specifications subject to change without notice

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Electrical Characteristics @ $T_j=25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	600	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance ²	$V_{GS}=10V, I_D=16mA$	-	-	300	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	2	-	5	V
g_{fs}	Forward Transconductance	$V_{DS}=10V, I_D=16mA$	-	28	-	mS
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=480V, V_{GS}=0V$	-	-	25	μA
I_{GSS}	Gate-Source Leakage	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Q_g	Total Gate Charge ²	$I_D=0.1A$	1.8	2.5	3.2	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=200V$	-	1.3	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	$V_{GS}=10V$	-	0.8	-	nC
$t_{d(on)}$	Turn-on Delay Time ²	$V_{DS}=300V$	-	11.5	-	ns
t_r	Rise Time	$I_D=10mA$	-	14.5	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=3.3\Omega, V_{GS}=10V$	-	14	-	ns
t_f	Fall Time	$R_D=30k\Omega$	-	120	-	ns
C_{iss}	Input Capacitance	$V_{GS}=0V$	8.8	12.5	16.2	pF
C_{oss}	Output Capacitance	$V_{DS}=25V$	7	10	13	pF
C_{rss}	Reverse Transfer Capacitance	$f=1.0MHz$	5	7	9	pF

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage ²	$I_S=0.05A, V_{GS}=0V$	-	-	1.5	V

Notes:

1. Pulse width limited by Max. junction temperature.
2. Pulse test
3. Mounted on min. copper pad.

THIS PRODUCT IS SENSITIVE TO ELECTROSTATIC DISCHARGE, PLEASE HANDLE WITH CAUTION.

USE OF THIS PRODUCT AS A CRITICAL COMPONENT IN LIFE SUPPORT OR OTHER SIMILAR SYSTEMS IS NOT AUTHORIZED.

APEC DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

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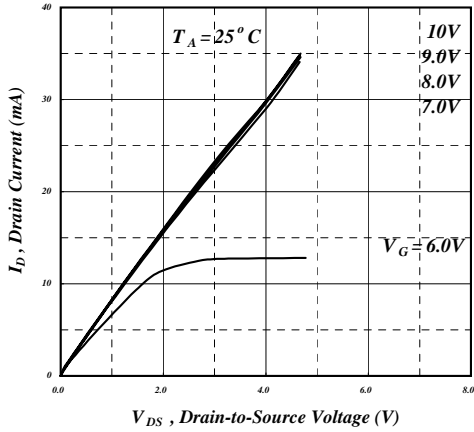


Fig 1. Typical Output Characteristics

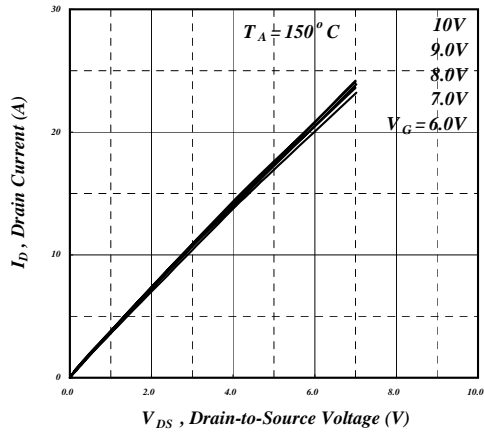


Fig 2. Typical Output Characteristics

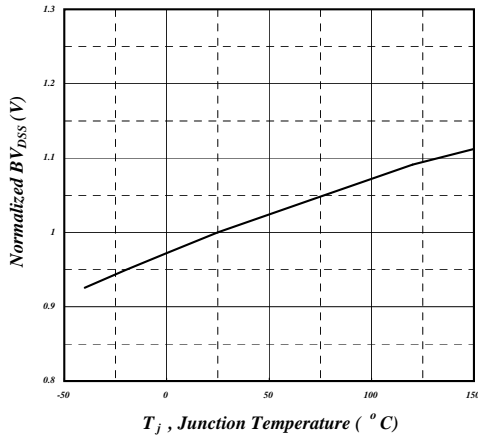


Fig 3. Normalized BV_{DSS} v.s. Junction Temperature

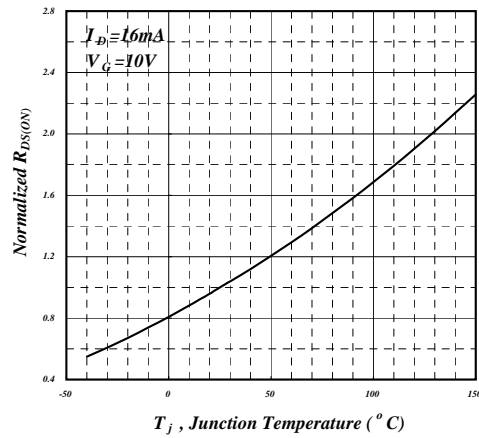


Fig 4. Normalized On-Resistance v.s. Junction Temperature

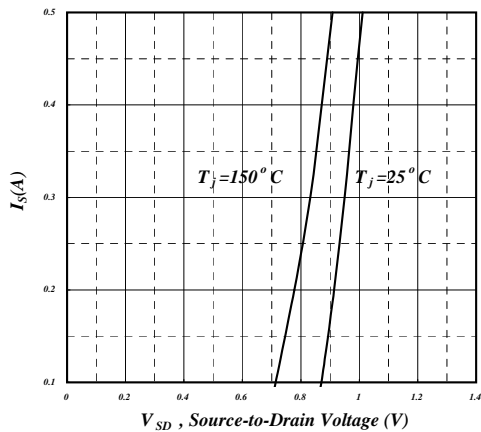


Fig 5. Forward Characteristic of Reverse Diode

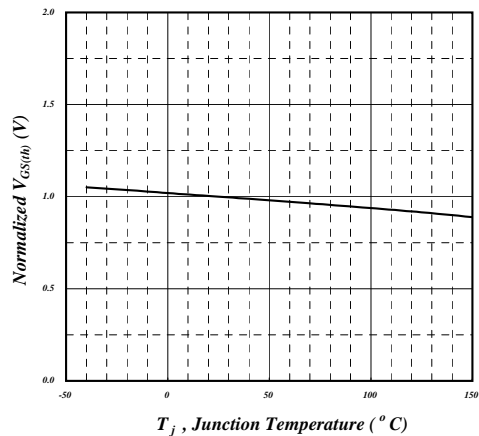


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

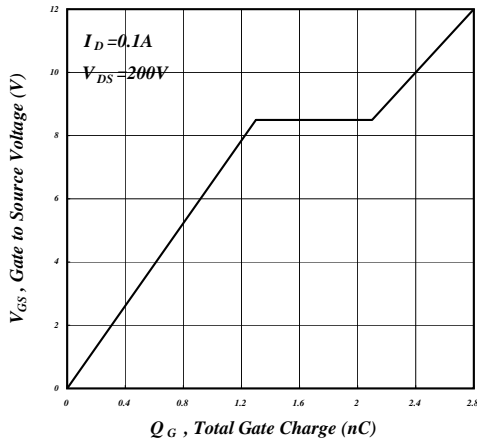


Fig 7. Gate Charge Characteristics

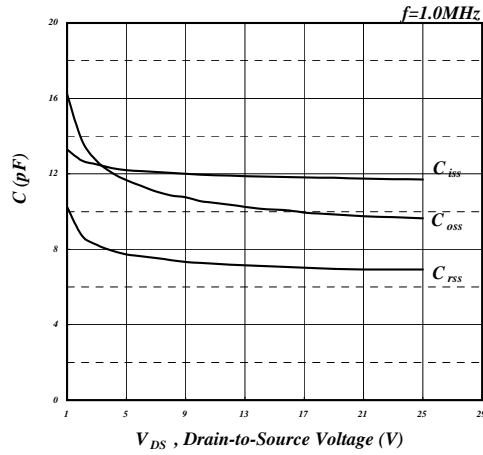


Fig 8. Typical Capacitance Characteristics

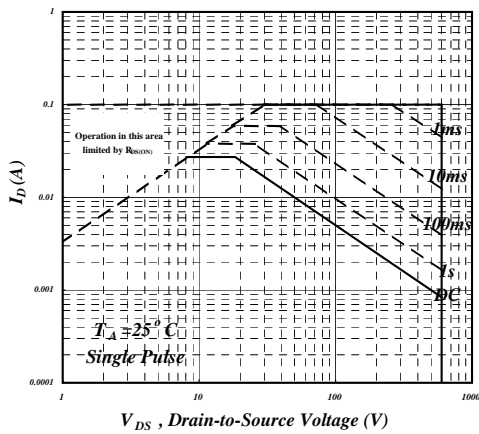


Fig 9. Maximum Safe Operating Area

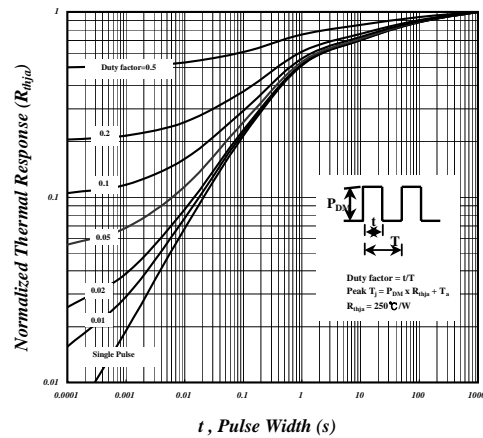


Fig 10. Effective Transient Thermal Impedance

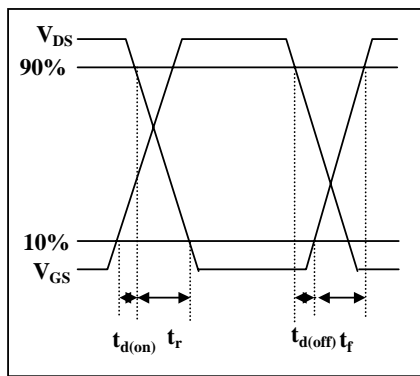


Fig 11. Switching Time Waveform

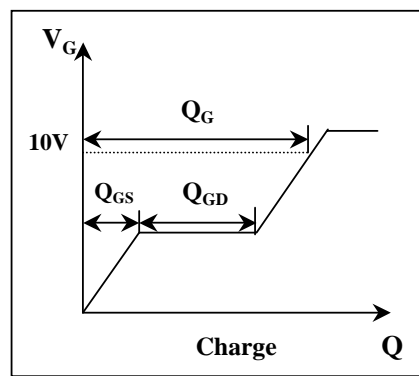


Fig 12. Gate Charge Circuit