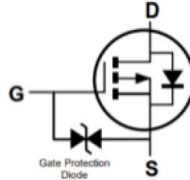
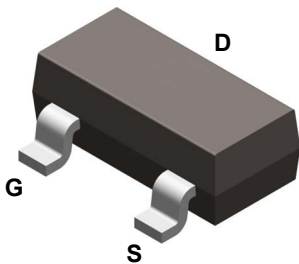


MOSFET

Single, P-Ch

multicomp **PRO**

RoHS
Compliant



Features

- Low on-resistance
- High-speed switching
- Drive circuits can be simple
- Parallel use is easy
- ESD protected gate up to 2KV HBM

Typical Applications

- P-channel enhancement mode effect transistor
- Switching application

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Maximum Ratings (@TA=25°C unless otherwise specified)

Parameter	Symbol	Value	Units
Drain-to-Source Voltage	V_{DSS}	-50	V
Gate-to-Source Voltage	V_{GSS}	± 20	
Continuous Drain Current	I_D	-130	mA
Pulsed Drain Current *4	I_{DM}	-520	

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation *1	P_D	0.36	W
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	347	$^{\circ}C/W$
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	208	$^{\circ}C/W$
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	175	$^{\circ}C/W$
Operating Junction Temperature Range	T_J	-55 to +150	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}C$

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
sg.element14.com/b/multicomp-pro

multicomp **PRO**

MOSFET

Single, P-Ch

multicomp **PRO**

Electrical Characteristics (@TA=25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = -250μA	-50	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -50V, V _{GS} = 0V	-	-	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V, V _{DS} = 0V	-	-	±10	μA
On Characteristics *2						
R _{DS(ON)}	Static Drain-Source On-resistance	V _{GS} = -5V, I _D = -0.1A	-	2.4	8	Ω
		V _{GS} = -10V, I _D = -0.13A	-	2	6	
V _{GS(TH)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.5	-2	V
Dynamic Characteristics *3						
C _{ISS}	Input Capacitance	V _{GS} = 0V V _{DS} = -20V f = 1.0MHz	-	53	-	pF
C _{OSS}	Output Capacitance					
C _{RSS}	Reverse Transfer Capacitance					
R _G	Gate Resistance	f = 1.0MHz, V _{GS} = 0V	-	721	-	Ω
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time	V _{DS} = -15V R _L = -50Ω I _D = -2.5A	-	2.5	-	ns
t _r	Turn-on Rise Time					
t _{d(OFF)}	Turn-Off Delay Time					
t _f	Turn-Off Fall Time					
Q _G	Total Gate-Charge	V _{DS} = -25V V _{GS} = -4.5V I _D = -0.2A	-	2.5	-	nC
Q _{GS}	Gate to Source Charge					
Q _{GD}	Gate to Drain (Miller) Charge					
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage *2	I _S = -0.26A, V _{GS} = 0 V	-	-0.9	-1.4	V
I _S	Continuous Source Current	T _C = 25°C	-	-	-0.13	A
I _{SM}	Pulsed Source Current	T _C = 25°C	-	-	-0.52	A

Notes:

1. Surface mounted on FR4 board, and standard footprint, t ≤ 10 sec
2. Pulse test: pulse width ≤ 300μs, duty cycle ≤ 2%
3. Guaranteed by design, not subject to production
4. Pulse width limited by maximum junction temperature

MOSFET

Single, P-Ch

Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

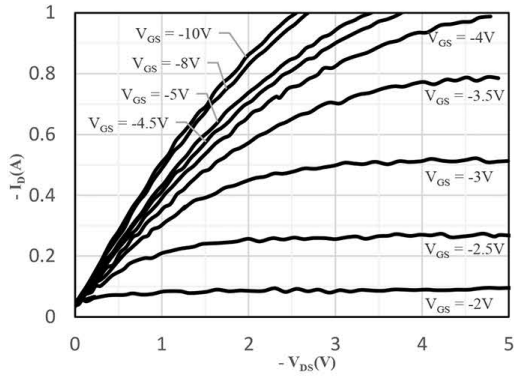


Fig 1 Output Characteristics

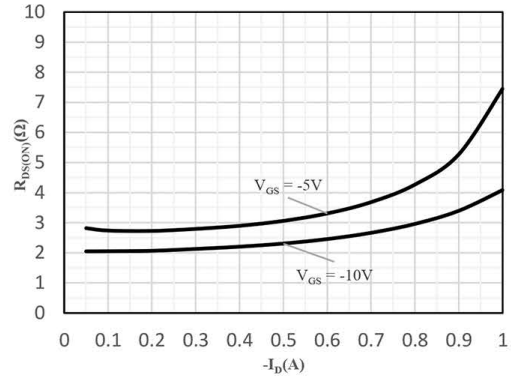


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

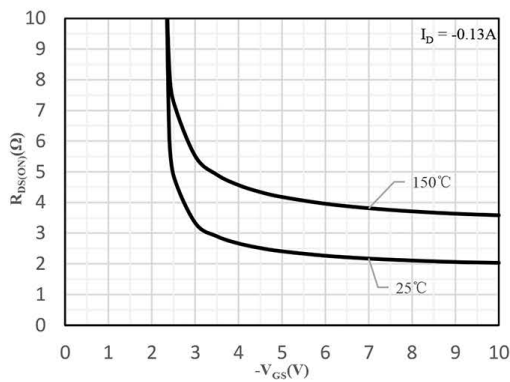


Fig 3 On-Resistance vs. Gate-Source Voltage

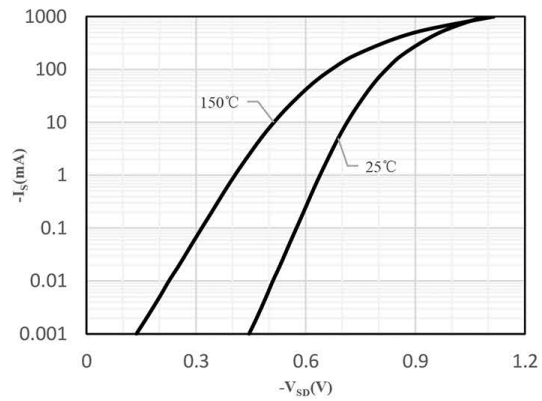


Fig 4 Body-Diode Characteristics

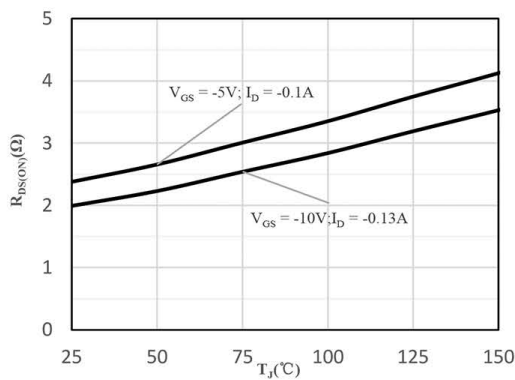


Fig 5 On-Resistance vs. Junction Temperature

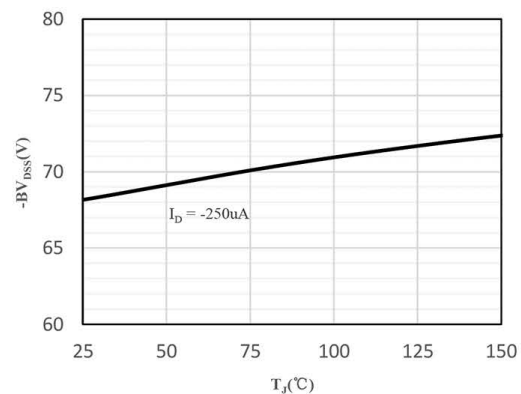


Fig 6 Drain-Source Voltage vs. Junction Temperature

MOSFET

Single, P-Ch

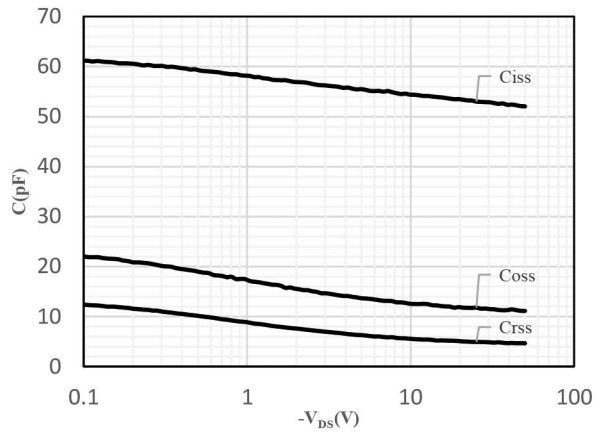


Fig 7 Capacitance Characteristics

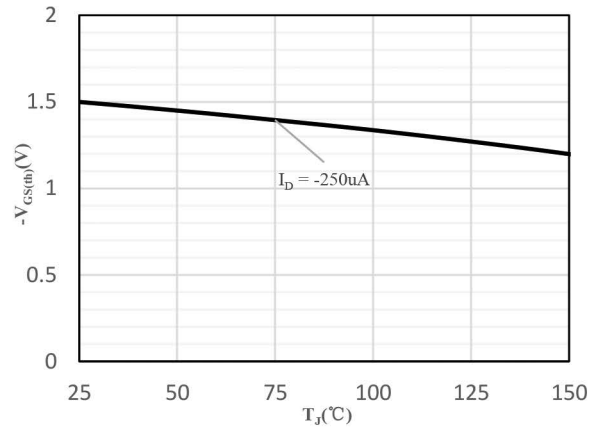


Fig 8 Gate Voltage vs. Junction Temperature

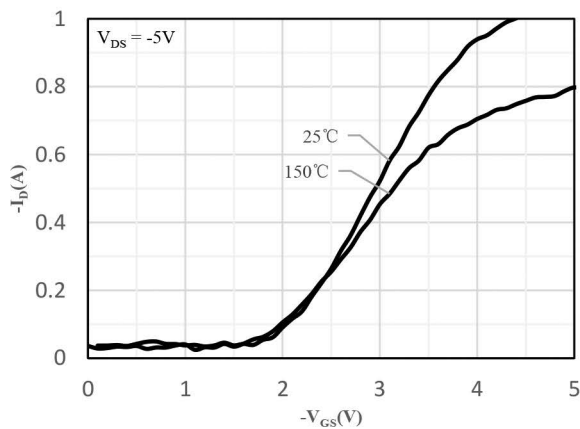


Fig 9 Transfer Characteristics

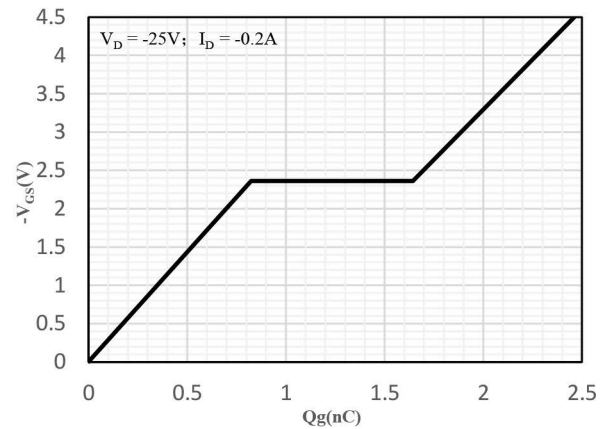


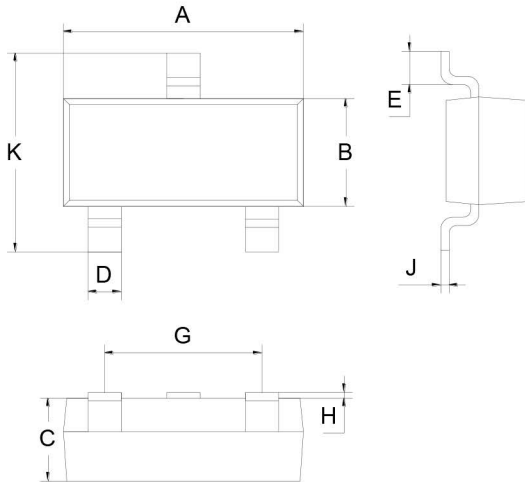
Fig 10 Gate-Charge Characteristics

MOSFET

Single, P-Ch

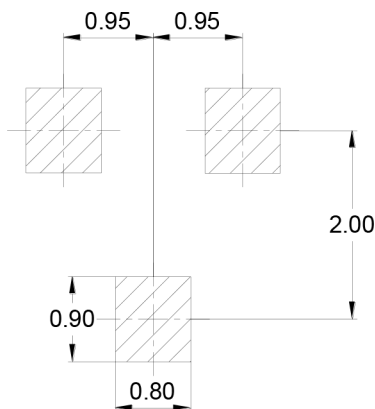
Package Outline Dimensions

SOT-23



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Mounting Pad Layout



Dimensions : Millimetres

Part Number Table

Description	Part Number
MOSFET, Single, P-Channel, Enhancement Mode, -50V, -130mA, 0.36W, SOT-23	BSS84ES

Important Notice : This data sheet and its contents (the "Information") belong to the members of the AVNET group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp Pro is the registered trademark of Premier Farnell Limited 2019.