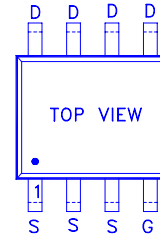
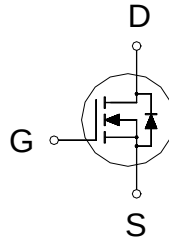


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30	4.5m Ω	20A



G : GATE
D : DRAIN
S : SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_C = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	20	A
	$T_C = 90\text{ }^\circ\text{C}$		15	
Pulsed Drain Current ¹		I_{DM}	50	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	2.5	W
	$T_C = 90\text{ }^\circ\text{C}$		2.0	
Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		50	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55\text{ }^{\circ}C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 15A$		5.7	7.8	m Ω
		$V_{GS} = 10V, I_D = 20A$		3.9	4.5	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 15V, I_D = 17A$		65		S

DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		3300		pF
Output Capacitance	C _{oss}			760		
Reverse Transfer Capacitance	C _{rss}			250		
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = 10V, I _D = 20A		25	35	nC
Gate-Source Charge ²	Q _{gs}			9.8		
Gate-Drain Charge ²	Q _{gd}			8.8		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 15V , R _L = 15Ω I _D ≅ 1A, V _{GS} = 10V, R _{GEN} = 6Ω		20		nS
Rise Time ²	t _r			30		
Turn-Off Delay Time ²	t _{d(off)}			73		
Fall Time ²	t _f			19		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _C = 25 °C)						
Continuous Current	I _S				4.5	A
Pulsed Current ³	I _{SM}				9	
Forward Voltage ¹	V _{SD}	I _F = I _S , V _{GS} = 0V			1.1	V
Reverse Recovery Time	t _{rr}	I _F = 3A, dI _F /dt = 100A / μS		40	70	nS

¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH "P0403BVG", DATE CODE or LOT #

Orders for parts with Lead-Free plating can be placed using the PXXXXXXXG parts name.

SOIC-8(D) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.4	0.715	0.83
B	3.8	3.9	4.0	I	0.19	0.22	0.25
C	5.8	6.0	6.2	J	0.25	0.375	0.5
D	0.33	0.445	0.51	K	0°	4°	8°
E		1.27		L			
F	1.25	1.375	1.62	M			
G	0.1	0.175	0.25	N			

