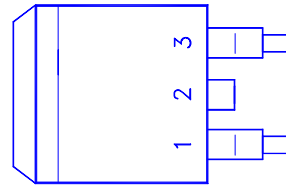
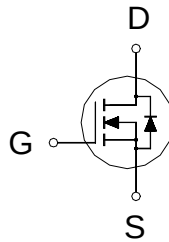


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
25	7mΩ	70A



1. GATE
2. DRAIN
3. SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		$V_{GS} \pm$	20	V
Continuous Drain Current	$T_C = 25\text{ °C}$	I_D	70	A
	$T_C = 100\text{ °C}$		45	
Pulsed Drain Current ¹		I_{DM}	170	
Avalanche Current		I_{AR}	60	mJ
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	140	
Repetitive Avalanche Energy ²	$L = 0.05\text{mH}$	E_{AR}	5.6	
Power Dissipation	$T_C = 25\text{ °C}$	P_D	65	W
	$T_C = 100\text{ °C}$		38	
Operating Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Lead Temperature (¹ / ₁₆ " from case for 10 sec.)		T_L 275		

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		2.3	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	
Case-to-Heatsink	$R_{\theta CS}$	0.6		

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

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

PARAMETER SY	MBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	25			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	3	
Gate-Body Leakage	$I_{GSS} V$	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 250	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			25	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			250	

On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 10V, V _{GS} = 10V	70			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 30A		7	9	mΩ
		V _{GS} = 7V, I _D = 24A		8	10	
Forward Transconductance ¹	g _{fs} V	V _{DS} = 15V, I _D = 30A		16		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		2700		pF
Output Capacitance	C _{oss}			500		
Reverse Transfer Capacitance	C _{rss}		200			
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = 10V, I _D = 35A		25		nC
Gate-Source Charge ²	Q _{gs}			7		
Gate-Drain Charge ²	Q _{gd}		11			
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 15V, R _L = 1Ω I _D ≅ 30A, V _{GS} = 10V, R _{GS} = 2.5Ω		7		nS
Rise Time ²	t _r		7			
Turn-Off Delay Time ²	t _{d(off)}		24			
Fall Time ²	t _f			6		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _C = 25 °C)						
Continuous Current	I _S				70	A
Pulsed Current ³ I	I _{SM}				170	
Forward Voltage ¹ V	V _{SD} I	I _F = I _S , V _{GS} = 0V			1.3	V
Reverse Recovery Time	t _{rr}	I _F = I _S , dI _F /dt = 100A / μS		37		nS
Peak Reverse Recovery Current	I _{RM(REC)}		200			A
Reverse Recovery Charge	Q _{rr}			0.043		μC

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 "P70N02LS", DATE CODE or LOT #

TO-263 (D²PAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min. T	yp.	Max.		Min. T	yp.	Max.
A	14.5	15	15.8	H	1.0	1.5	1.8
B	4.2		4.7 9.8				10.3
C	1.20		1.35	J	6.5		
D	2.8			K	1.5		
E	0.3	0.4	0.5 L 0.7				1.4
F	-0.102		0.203	M	4.83 5.08 5.33		
G 8.5		9	9.5	N			

