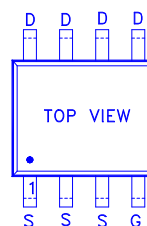
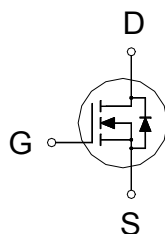


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	16mΩ	10A



4 :GATE
5,6,7,8 :DRAIN
1,2,3 :SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	10	A
	$T_A = 70\text{ °C}$		8	
Pulsed Drain Current ¹		I_{DM}	55	
Avalanche Current		I_{AS}	23	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	26	mJ
Power Dissipation	$T_A = 25\text{ °C}$	P_D	2.6	W
	$T_A = 70\text{ °C}$		1.6	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		25	°C / W
Junction-to-Ambient	$R_{\theta JA}$		50	

¹Pulse width limited by maximum junction temperature.

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

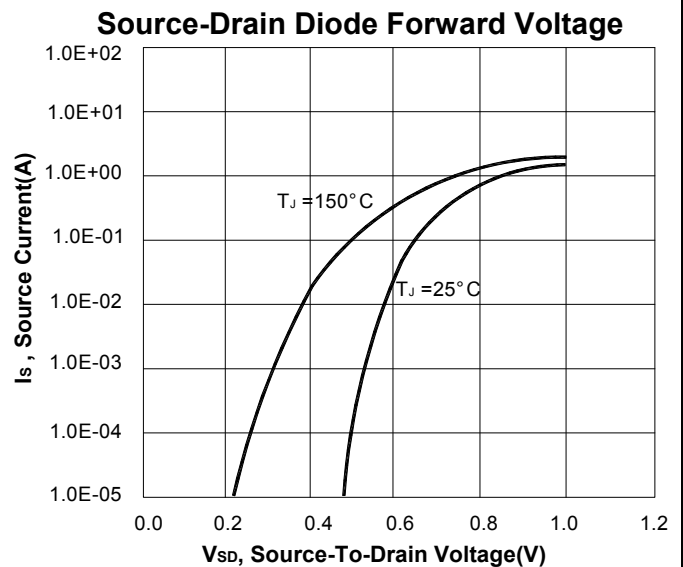
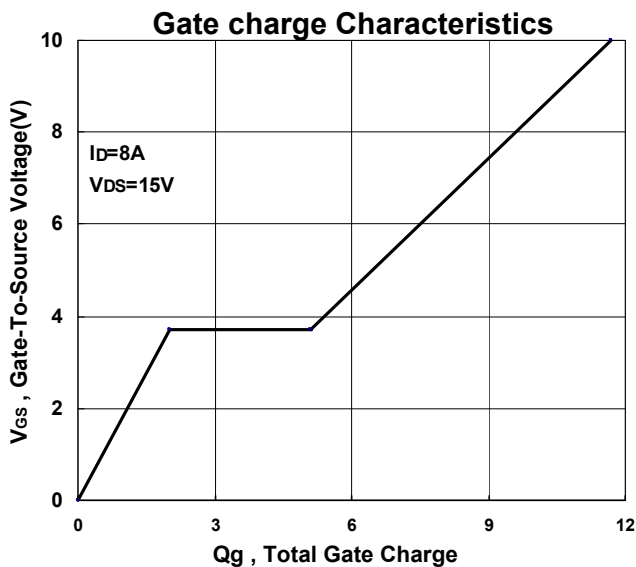
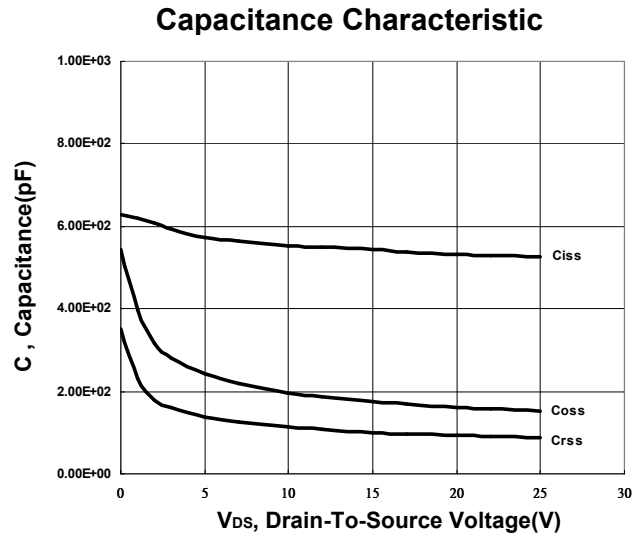
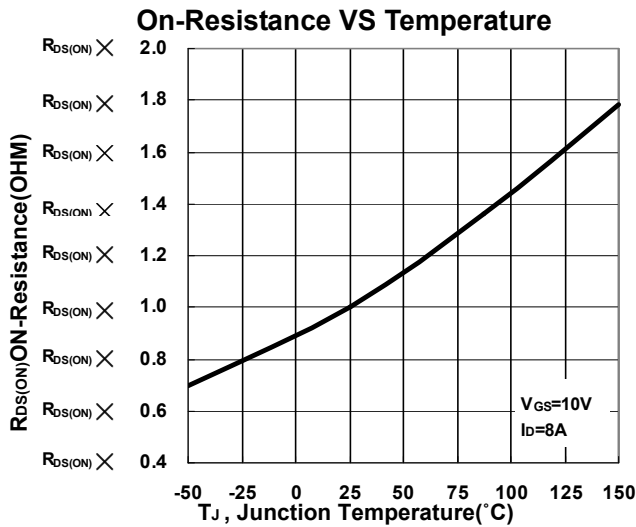
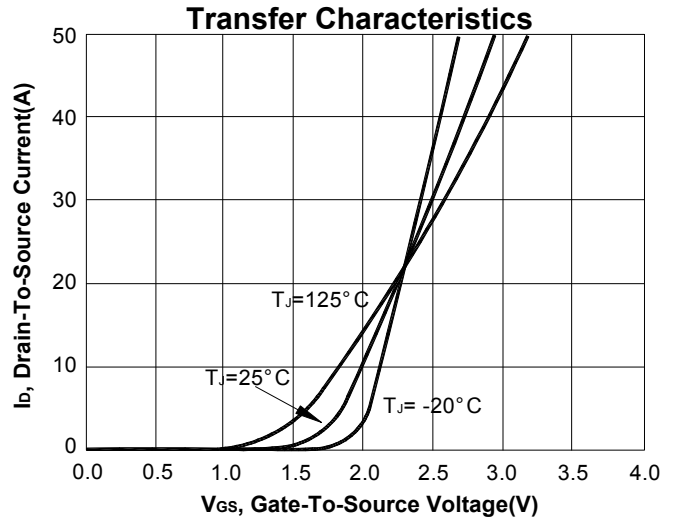
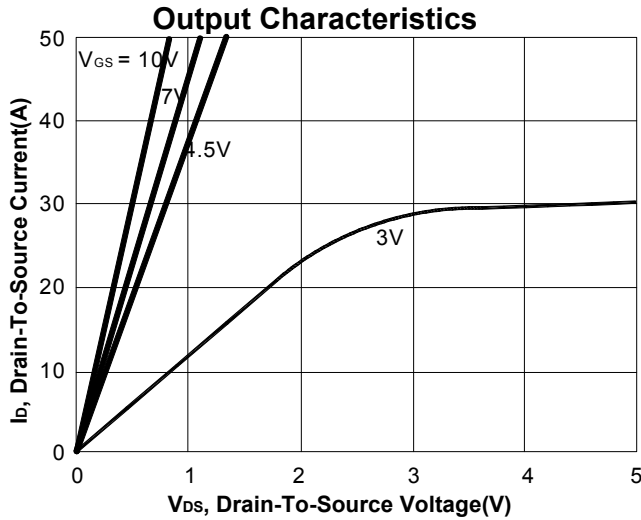
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.8	2.5	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_C = 125\text{ °C}$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 10V, V_{GS} = 10V$	55			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 6A$		19.4	25	mΩ
		$V_{GS} = 10V, I_D = 8A$		11.8	16	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 8A$		40		S

DYNAMIC					
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		560	pF
Output Capacitance	C_{oss}			179	
Reverse Transfer Capacitance	C_{rss}			100	
Gate Resistance	R_G	$V_{GS} = 0V, f = 1MHz$		2	Ω
Total Gate Charge ²	$Q_g (V_{GS}=10V)$	$V_{GS} = 10V$ $V_{DS} = 0.5V_{(BR)DSS}, I_D = 8A,$		12	nC
	$Q_g (V_{GS}=4.5V)$			5	
Gate-Source Charge ²	Q_{gs}			2.1	
Gate-Drain Charge ²	Q_{gd}			3.5	
Turn-On Delay Time ²	$t_{d(on)}$		$V_{DS} = 15V, R_L = 1.5\Omega$ $I_D \cong 10A, V_{GS} = 10V, R_{GEN} = 6\Omega$		
Rise Time ²	t_r			29	
Turn-Off Delay Time ²	$t_{d(off)}$			45	
Fall Time ²	t_f			18	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_A = 25^\circ C$)					
Continuous Current	I_S			2.6	A
Forward Voltage ¹	V_{SD}	$I_F = 8A, V_{GS} = 0V$		1	V
Reverse Recovery Time	t_{rr}	$I_F = 8A, di_F/dt = 100A / \mu S$		24	nS
Reverse Recovery Charge	Q_{rr}			29	nC

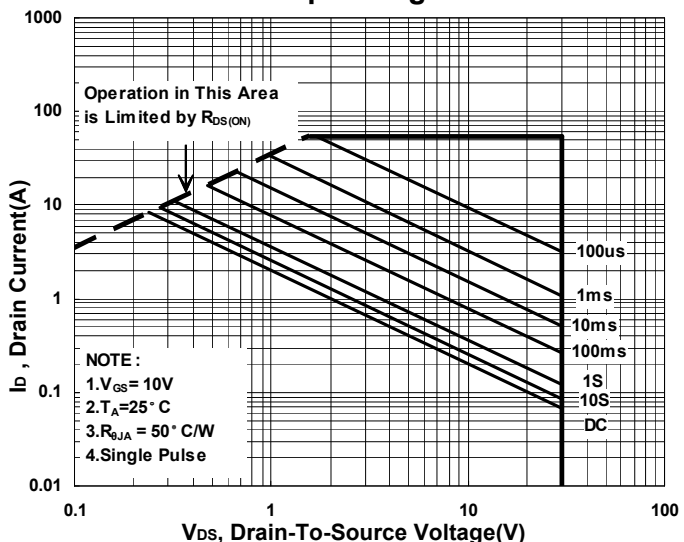
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

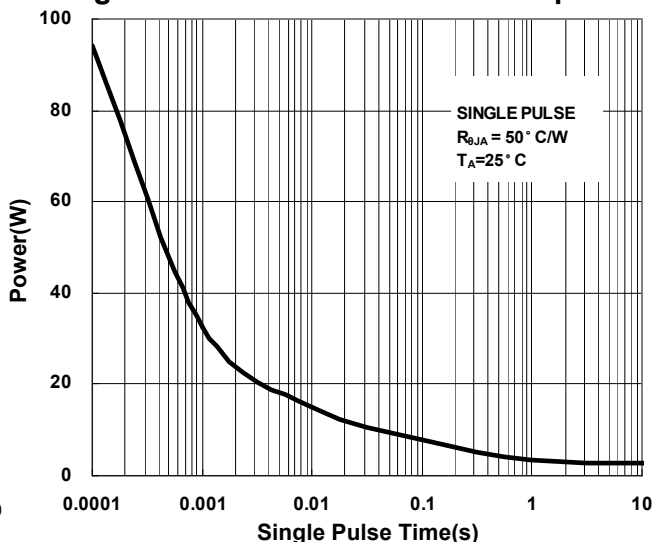
REMARK: THE PRODUCT MARKED WITH "P1603BV", DATE CODE or LOT #



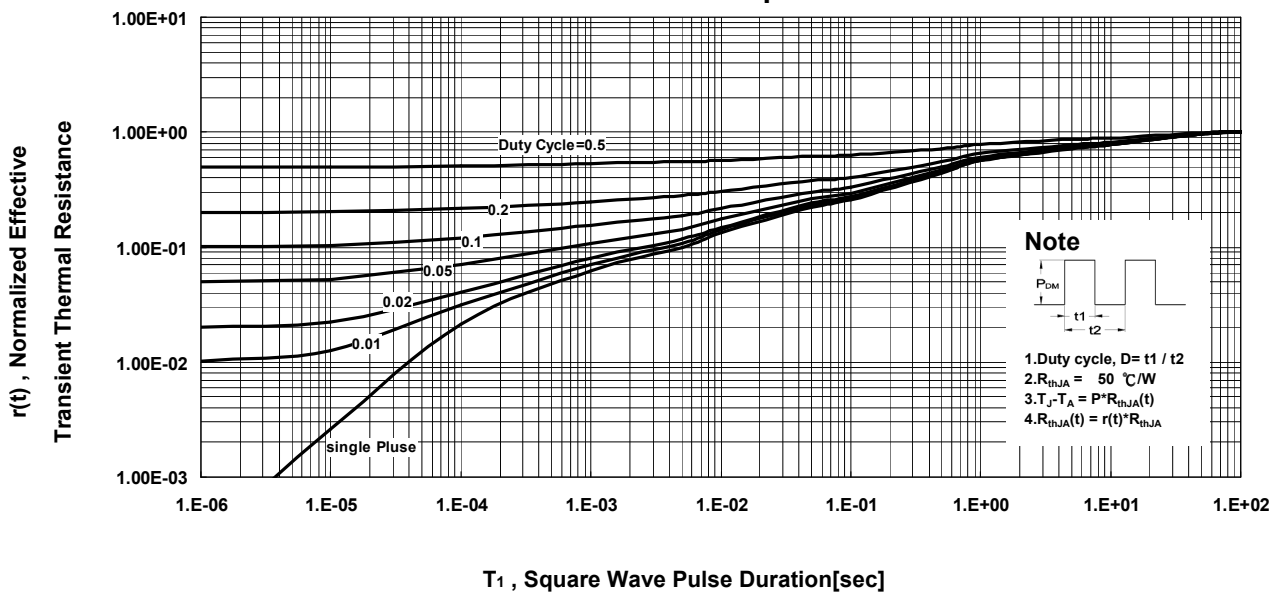
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



SOP-8 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.70	4.90	5.10	H	0.40	0.715	0.83
B	3.70	3.90	4.10	I	0.19	0.22	0.26
C	5.80	6.00	6.20	J	0.25	0.375	0.5
D	0.33	0.445	0.51	K	0°	4°	8°
E		1.27		L			
F	1.20	1.375	1.62	M			
G	0.08	0.175	0.28	N			

